R E P O R T R E S U M E S

ED 016 407 EM 006 013

A DEMONSTRATION MODEL OF A MEANS TO DISSEMINATE ADVANCEMENTS IN INSTRUCTIONAL USES OF EDUCATIONAL MEDIA. FINAL REPORT.

BY- NUSS, EUGENE M. ROOKEY, ERNEST J.
PENNSYLVANIA STATE DEPT. OF PUBLIC INSTRUCTION

REPORT NUMBER BR-5-0271 PUB DATE SEP 66
LOCK HAVEN STATE COLL., PA.
REPORT NUMBER NDEA-VIIB-540
CONTRACT OEC-5-16-023
EDRS PRICE MF-$0.75 HC-$6.24 154P.

DESCRIPTORS- *INFORMATION DISSEMINATION, *INSTRUCTIONAL MEDIA, *TEACHER BEHAVIOR, *STATISTICAL ANALYSIS, TEST RELIABILITY, TEST VALIDITY, BEHAVIOR CHANGE, *EXPERIMENTS, AUDIOVISUAL PROGRAMS, PUBLICATIONS, THE CIRCULATOR, PENNSYLVANIA

THIS STUDY WAS PHASE 1 OF A 2-PHASE PROJECT DESIGNED TO CHANGE TEACHER BEHAVIOR WITH THE OBJECTIVE OF IMPROVED CLASSROOM UTILIZATION OF NEW INSTRUCTIONAL MEDIA. PHASE 1 TRIED TO INCREASE TEACHER KNOWLEDGE OF MEDIA VIA A MONTHLY NEWSLETTER, "THE CIRCULATOR," DISTRIBUTED IN 5 DISSEMINATION PATTERNS TO 2,200 EDUCATORS IN PENNSYLVANIA. A CONTROL GROUP RECEIVED NO COPIES. ANALYSIS OF RESULTS SHOWED NO SIGNIFICANT DIFFERENCES AMONG PATTERNS AND SMALL EVIDENCE OF READER INTEREST. IT IS SUGGESTED THAT A FOLLOW-UP STUDY OF THIS PROJECT IDENTIFY VARIABLES POSSIBLY CONTAMINATING THE FINDINGS OF THIS STUDY, AND DETERMINE READER REACTION TO THE PUBLICATION. APPENDICES INCLUDE ISSUES OF "THE CIRCULATOR." (MS)

ED016407

B-540 A

FINAL REPORT

New Project No. 5-0271
Contract Number: OE-5-16-023

EM066013

A DEMONSTRATION MODEL OF A MEANS TO DISSEMINATE ADVANCEMENTS IN INSTRUCTIONAL USES OF EDUCATIONAL MEDIA

September, 1966

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

A DEMONSTRATION MODEL OF A MEANS TO DISSEMINATE ADVANCEMENTS IN INSTRUCTIONAL USES OF EDUCATIONAL MEDIA

New Project No. 5-0271
Contract Number: OE-5-16-023

Dr. Eugene M. Nuss
Author & Project Coordinator

Dr. Ernest J. Rookey
Project Director

September, 1966

The research reported herein was performed pursuant to a Contract No. OE-5-16-023 with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Pennsylvania Department of Public Instruction
In Conjunction With
The Lock Haven State College

Harrisburg, Pennsylvania

EM 006 013

TABLE OF CONTENTS

	Page Number
INTRODUCTION	1
The Area Curriculum Center Program	1
Description of Curriculum Area Six	2
The Need for Improved Dissemination of Information	2
METHOD	3
Personnel	3
Project Procedures	3
The Newsletter	3
Dissemination Patterns	4
Evaluation	4
Summary of Purpose of Project	5
The Dissemination Patterns	5
Classification of Schools	5
The Participation Questionnaire	5
The Pre-Study Survey	6
Selection of Sample Schools	6
The Pre-Study Instrument	6
Pre-Study Survey Findings	6
The Newsletter	10
Format	10
Sources of Newsletter Information	11
The Contents of the Newsletter	11
Distribution of the Newsletter	15
RESULTS	16
Reactions From the Schools	16
Written Requests for Information and Services From The Circulator Editor and From The Curriculum Center	16
Unsolicited Correspondence From the Schools	16
Responses Through Business Reply Cards	16
Oral Responses From Schools	17
Reaction From Instructional Media Persons And Others Outside Area Six	17
Reactions From Media Producers and Distributors	17
Reactions From Associates In The Field	17
Reactions From Other Sources	17
The Post-Study Survey	19
DISCUSSION	20
CONCLUSIONS, IMPLICATIONS (AND RECOMMENDATIONS)	20
SUMMARY	
APPENDIXES	

LIST OF TABLES

Number	Title	Page
1	Teacher Media Usage of Instructional Media In Area Six for All Schools in the Study Sample.	7
2	Attitudes Toward Instructional Media Among Teachers in Area Six Schools Involved in the Study Group.	8
3	Mean Scores Derived From Teachers' Responses To a Survey of Knowledge of Instructional Media for all Teachers Involved in the Study Group and by Dissemination Pattern Groups.	9
4	An Item Analysis of the Inventory to Identify Areas and Subjects Within the Field of Instructional Media Where Teachers Are Least Informed.	10
5	A Table Showing the Distribution of Articles Appearing In The Circulator Arranged by Type Instructional Media.	12
6	A Table Showing the Distribution of Articles Appearing in The Circulator Arranged by Subject Matter Area and Grade Level.	13
7	A Table Showing the Number of Copies of The Circulator Mailed Each Month by Distribution Pattern.	15
8	A Table Showing the Results of the Business Reply Card #1 for Evaluation of The Circulator.	18
9	A Table Showing the Results of the Business Reply Card #2, Topics and Activities Readers Requested.	18
10	A Table of the Post-Survey Data by Dissemination Pattern.	19
11	A Table of Schools with Directors by Quartiles	20

ACKNOWLEDGMENTS

This substantive report is the result of team effort. Close working relationships among all members of the Research Staff were maintained until this report was completed. The Staff drew on the experiences of teachers and administrators in many school systems and gratefully acknowledges the valuable assistance of professors, curriculum specialists, instructional media (audio-visual) specialists, and companies who graciously granted permission to use information from their publications or wrote original articles for The Circulator.

Project Staff and Notable Participants

Dr. Eugene M. Nuss, Professor
Lock Haven State College
Lock Haven, Penna. 17745
Project Coordinator

Dr. Ernest J. Rookey
Bureau of Curriculum Planning
Department of Public Instruction
Harrisburg, Penna.
Project Director

Mr. C. Herbert Larson, Jr., Associate Professor
Lock Haven State College
Lock Haven, Penna.
Curriculum Coordinator

Mrs. Linda C. Herter
Lock Haven State College
Lock Haven, Penna.
Project Secretary

Mr. Donald M. Carroll Jr., Director
Bureau of Curriculum Planning
Department of Public Instruction
Harrisburg, Penna.

Dr. Sidney N. Archer, Director
Bureau of Research
Department of Public Instruction
Harrisburg, Penna.

Acknowledgements (Continued)

Dr. Marcus Konick, Director
Bureau of Instructional Materials and Services
Department of Public Instruction
Harrisburg, Penna.

Dr. Stanley Miller, Director
Bureau of General and Academic Education
Department of Public Instruction
Harrisburg, Penna.

INTRODUCTION

This study, sponsored under Part B, Title VII, NDEA, was conducted between 1 May 1965 and 1 September 1966. It constituted the first phase of a proposed two-phase investigation into the role of information dissemination as a change factor in teacher behavior.

Specifically, the main objective of this project was to utilize an organization of curriculum, audio-visual, and educational centers to demonstrate dissemination strategies which have the potential for improving teachers' knowledge of developments in educational media. A concomitant objective of the project was to ascertain which dissemination strategy would obtain the most effective results with respect to the following criteria:

1. improvement of local educators' knowledge of published developments in uses of educational media;
2. increased attendance and participation of teachers in curriculum and audio-visual demonstrations; and
3. improvement in communication among educators at the elementary, secondary, and college level.

The ultimate objective of this project was to ascertain if such a dissemination program actually improved the classroom utilization of new technology and media. However it was apparent that the testing of this criterion must be waived until there was evidence that the intermediate criteria i.e., 1, 2, and 3 above, were attained. Thus a second phase of this project was envisaged as a requisite to testing the ultimate criterion.

The Area Curriculum Center Program

The Bureau of Curriculum of the Pennsylvania Department of Public Instruction has devised and implemented a plan to make possible an optimal degree of decentralization in matters of school curriculum study and development, which will at the same time provide maximum communication and cooperation between the DPI and the local school districts. This plan is known as the Area Curriculum Center Program.

The Commonwealth is divided into geographic areas, with a curriculum center located in each. In most areas, the center is located in a state college. A coordinator is assigned to each center and serves to implement the program with the advice and approval of a committee of advisors made up of chief school administrators from the area. The Curriculum Center at Lock Haven State College provided housing for the project described herein. The Curriculum Coordinator of the Center worked half-time on the project.

Description of Curriculum Area Six

Curriculum Area Six, in which the study was made, consists of eleven counties where approximately 150,000 students attend the public and private schools. Area Six is located in Central Pennsylvania, including the following counties: Blair, Cameron, Centre, Clearfield, Clinton, Elk, Huntingdon, Lycoming, Mifflin, Snyder and Union. In addition to Lock Haven State College, several institutions of higher learning cooperate with the Center program. These include: Lycoming College, The Pennsylvania State University, and Bucknell University.

The Area Six region is, for the most part, a mountainous section of the state. Communications media among the schools of the area are developing slowly. Poor highways and long distances make intra-area travel difficult. There is also a generally recognized problem of isolation of the region from other sections of the Commonwealth. Curricular innovation is less than widespread in the schools of this area. A high percentage of the area's teachers are natives of the region and attend both undergraduate and graduate schools within the area.

There is within Area Six considerable resistance to school consolidation. Consequently, many school districts fail to meet even State minimum guidelines for school size. One-room schools for elementary pupils are not uncommon.

Conversely, several of the larger high schools in Pennsylvania are located in the two urban areas located within Area Six. Also, a few individual school districts have moved forward in curriculum development. In brief, there is considerable diversity of educational characteristics among the schools of Area Six.

The Need for Improved Dissemination of Information

The problem of how to communicate to teachers news of developments in educational media and technology is not unique with Area Six. However, the problem is aggravated by the variables listed above. Workshops and conferences have attracted, in the past, a disproportionate number of administrators - too few teachers. Notices of meetings of this type too often fail to reach the classroom teacher, also teachers find it difficult to obtain released time from teaching to attend professional meetings. Much of the literature descriptive of educational innovation is written in sophisticated and technical language which often does not effectively communicate significant findings to the classroom teacher. Too, most of the innovative ideas and practices employed by the creative teacher are never published, consequently, other teachers who might profit from these experiences are denied the opportunity.

The need to improve the lines of communication between the innovators and the classroom teacher provided impetus to this research. The distinctive characteristics of the Area Six environment afforded direction and suggested specific research procedures.

METHOD

Personnel

The Principal Investigator allocated 20% of his time to the project. His position as a member of the Bureau of Curriculum, DPI, enabled him to provide liason among the agencies involved in the research effort, and to offer leadership and services to the project from the State level.

A Project Coordinator was appointed to implement the project. This person was located at the Lock Haven State College Curriculum Center, and had served as Curriculum Coordinator of Area Six during two previous years.

The Area Six Curriculum Coordinator was engaged half-time in the project. It was anticipated that the Coordinator's responsibilities in the area of curriculum development would complement and enhance his contribution to the research project.

A full-time secretary was employed to work half-time on the project; half-time as secretary to the Curriculum Coordinator.

Other personnel who cooperated with the research effort were: The Director of the Bureau of Research, Department of Public Instruction; The Director of the Bureau of Instructional Materials, Department of Public Instruction; Six Research Assistants and their Director.

Project Procedures

The Newsletter

It was decided that a monthly newsletter would serve as the primary vehicle for communicating information about instructional media to the educators of Area Six. The responsibility for planning and publishing the newsletter was assigned to the Project Coordinator and the Area Curriculum Coordinator. Representatives of all educational agencies in Area Six were expected to cooperate with the project by providing ideas and information for the newsletter.

Sources of information, in addition to reports from the representatives, were identified. These included: 1) visits by the Coordinator to local schools to observe and describe innovative ideas being implemented in the classrooms; 2) reports of instructional media in the professional literature; 3) news releases by producers and distributors of instructional media products; 4) information from conferences and workshops, and

5) articles written by experts in the field of instructional media.

Dissemination Patterns

To test the effectiveness of the newsletter and to determine the manner in which it can be most efficiently distributed, dissemination patterns were set up to provide variance of distribution. It was decided that the newsletter would be mailed to educators in Curriculum Area Six by the following dissemination patterns:

Pattern A - All teachers in the schools selected for Distribution Pattern A will receive a copy of the newsletter mailed to the individual teacher at the school address.

Pattern B - In each school assigned to Pattern B an innovative teacher, so designated by the school administrator, will receive the newsletter each month.

Pattern C - All teachers in the schools selected for Distribution Pattern C will receive a copy of the newsletter mailed individually to their homes.

Pattern D - Schools in this pattern constitute the control group. No personnel in these schools will receive the newsletter.

Pattern E - One fourth of the teachers in each of the schools in Pattern E will receive the newsletter. The newsletter will be distributed within the school by the administrator.

Pattern F - The building administrator in each of the schools in Pattern F will receive the newsletter. No other persons in this pattern will receive the newsletter.

All private schools in Area Six were included on the mailing lists to receive the newsletter. However, none was included in the distribution patterns; i.e., private schools were to receive the newsletter, but were not to be included in the research project.

Evaluation

With the distribution pattern as the independent variable, it was necessary to measure gain in teacher knowledge of instructional media within each pattern, including the control group. To this end it was deemed necessary to construct a pre-study instrument that would give a base-line measurement of teacher knowledge of instructional media. The need for a post-study measure, including interviews, was recognized, as well.

It was anticipated that a major outcome of this phase of the study would be an increase in teacher knowledge among those teachers who received the newsletter. It was predicted that teachers who gained in knowledge would also display greater interest in and requests for instructional materials. It was felt that a measure of teacher participation in workshops and demonstrations, and their requests for materials and services would be valid indices of change in the direction of the project goals.

Summary of Purpose of Project

This design, then, was formulated to obtain data which might provide answers to two questions; 1) Will a newsletter, written for teachers, in a language understood by teachers, about teaching media and materials, produce a gain in teacher knowledge of instructional media? 2) If a gain in teacher knowledte of instructional media is obtained as a result of this project, which dissemination pattern(s) proved most effective? That is, is gain in teacher knowledge of instructional media related with type dissemination pattern?

The Dissemination Patterns

Classification of Schools

The 247 public schools in Area Six were distributed by random sample into the six dissemination patterns. The breakout of the patterns is indicated below:

Pattern	Description	No. of Schools	Number of Educators to Receive Newsletter
A	Sent to teacher at school address	44	756
B	Sent to an innovative teacher	41	41
C	Sent to each teacher at their home address	44	717
D	Control group	38	0
E	Sent to every fourth teacher	40	167
F	Sent to building administrator	40	40

The Participation Questionnaire

A letter and questionnaire were sent to each of the schools in the dissemination pattern. The purpose of the questionnaire was to collect information about the schools in the study and to compile mailing lists. (See Appendix #A)

Of the 247 questionnaires mailed to the schools, 210 were returned, these 210 schools were then eligible for participation in the study.

The Pre-Study Survey

Selection of Sample Schools

From each of the dissemination patterns, six schools were selected by random sample; these 36 schools were designated the sample, or study group, for pre-study testing.

The Pre-Study Instrument

A pre-study instrument was developed cooperatively by a consultant psychologist, personnel from the DPI Bureaus of Curriculum and Research, and the Project Coordinator. This instrument was forwarded September 3, 1965 to each of the 36 schools in the pre-study sample, along with instructions for its administration to the teachers. Twenty-eight schools returned the completed questionnaire. Follow-up requests from the DPI and the office of the Project Coordinator failed to yield a 100% return from the study group. The questionnaire was designed primarily to measure teacher knowledge of instructional media. However, it also included sections which contained items relative to teacher usage of and teacher attitude toward instructional media. (See Appendix #B). It should be noted that the survey instrument was described to the teachers as an inventory, rather than a test; i.e., its purpose was to get information for planning future services to schools and not to evaluate or rate teachers. Teachers who completed the questionnaire were instructed not to sign their names. An administrative control form was sent to the principal of each school in the study. He was requested to administer the questionnaire to the teachers and complete the control form. (See Appendix # C)

Pre-Study Survey Findings

Responses to the inventory items were recorded on answer sheets by the respondents and later punched into IBM cards by technicians. In addition to the survey responses, each card was coded to indicate the school and dissemination pattern in which the respondent was located and their variables. A total of 553 completed and usable answer sheets were returned to the Project Coordinator's office; the data were then transferred to the IBM cards.

The data were collated for each dissemination pattern by individual inventory item, by separate inventory section and for the total inventory questionnaire. Scores and percentage were derived. (See Table 1, 2, 3)

A visual item analysis of the inventory was conducted to identify areas and subjects within the field of instructional media where teachers were least informed. It was anticipated that information about such topics would be made available to teachers through the newsletter. The topics indicated in Table #4 were felt to be significant in this regard.

TABLE 1. TEACHER MEDIA USAGE OF INSTRUCTIONAL MEDIA IN AREA SIX FOR ALL SCHOOLS IN THE STUDY SAMPLE

Media Description	% of Group Reported No Use Made of Item
1. Flannel or Felt Board	68%
2. Filmstrips	29%
3. Slides	69%
4. 8mm films	88%
5. 16mm films	37%
6. 16, 33-1/3, or 78 rpm records	43%
7. Tape recordings	71%
8. Overhead Transparencies	76%
9. Spirit duplications (Dittos)	10%
10. Radio Programs	86%
11. Television	66%
12. Teaching machine	95%
13. Models, specimens, and dioramas	26%
14. Posters and bulletin boards	7%
15. Field trips	68%
16. Charts and graphs	13%
17. Pictures and cartoons	14%
18. Opaque Projector	78%
19. Role Playing or sociodrama	56%
20. Intrinsically programmed textbooks	67%

TABLE 2. ATTITUDES TOWARD INSTRUCTIONAL MEDIA AMONG TEACHERS IN AREA SIX SCHOOLS INVOLVED IN THE STUDY GROUP.

	Agree	Disagree
Need training in uses of instructional media	56%	23%
Would attend workshops in media utilization	63%	17%
No student involvement when instructional media used	13%	68%
Uses of instructional media limited by imagination only	62%	21%
Wider acceptance of instructional media needed	76%	8%
Proper use of instructional media can provide for individual differences	80%	6%
Rather use a blackboard than media gadgets	22%	65%
Development of new instructional media a waste of time	11%	78%
Only through instructional media can vicarious learning be provided	40%	39%
Teaching foreign languages in elementary lends itself well to use of instructional media	51%	8%
The creative student is apt to be stifled by extensive use of instructional media	27%	50%
Provision for the purchase of instructional media should be included in every teacher's request to the school districts instructional budget	80%	7%
The development of centers for instructional media in every school unit should be encouraged and facilitated	81%	7%
The expense of most instructional media is out of all proportion to their educational value	24%	47%
Recent innovations in educational media are not useful to the classroom teacher	14%	66%
My use of new educational media has increased greatly in recent years	54%	17%
Wider usage of currently accepted instructional media is needed in my school	59%	10%

Table 2 (Continued)

If surplus funds exist, which could be spent only for supplementary books or for more instructional media, the instructional media should be chosen	39%	29%
Instructional media are too specific and have little adaptability for different teaching requirements or situations	17%	53%
The use of educational media tends to subordinate the teacher's relationship with students	20%	51%
The passive characteristic of learning by instructional media is not conducive to the most effective learning	20%	51%
The use of programmed instruction will revolutionize the process of instruction as we know it now	35%	31%

TABLE 3. MEAN SCORES DERIVED FROM TEACHERS' RESPONSES TO A SURVEY OF KNOWLEDGE OF INSTRUCTIONAL MEDIA FOR ALL TEACHERS INVOLVED IN THE STUDY GROUP AND BY DISSEMINATION PATTERN GROUPS.

Distribution Pattern	Mean Score	Description of Dissemination Pattern
Total study group mean score for the combined dissemination pattern is 48%		
A	47%	All teachers will receive a copy of the newsletter mailed to the individual teacher at the school.
B	47%	In each school, an innovative teacher designated by the school administration will receive the newsletter each month.
C	51%	All teachers in the school will receive a copy of the newsletter mailed individually to their home address.
D	46%	No personnel in these schools will receive the newsletter. They are designated as the control group.
E	49%	One fourth of the teachers in each school will receive the newsletter.
F	51%	The building administrator in each of the schools will receive the newsletter.

TABLE 4. AN ITEM ANALYSIS OF THE INVENTORY TO IDENTIFY AREAS AND SUBJECTS WITHIN THE FIELD OF INSTRUCTIONAL MEDIA WHERE TEACHERS ARE LEAST INFORMED

Instructional Media	% Respondents Who Reported That They Never Use Listed Media
8mm films	88%
Tape recordings	71%
Overhead transparencies	76%
Radio	86%
Teaching Machines	95%
Opaque Projectors	78%

Other items of special interest as reported on the inventory include: a) 76% of the respondents indicated that they felt wider use of instructional media was needed; b) 54% said their use of new educational media had increased greatly in recent years; c) 39% preferred spending surplus funds for books over newer instructional media; and d) 35% felt the use of programmed instruction will revolutionize the process of instruction.

The respondents' scores on the inventory were lowest on the following items: a) the role of ETV; b) the use of charts and graphs; c) principles of programmed learning; d) weaknesses of filmstrips.

The Newsletter

The Format

To communicate a wider range of information in a variety of interesting ways, it was decided the newsletter should contain four main sections: a) "From The Editor," which would offer each month a point of view on some important aspect of instructional media; b) "News of Instructional Media," - articles describing media and their uses; c) "News From Area Six Schools," articles about innovative ideas and practices being employed by educators in the schools of Area Six; and

d) "Aids and Ideas," brief articles about sources of information, and materials available to teachers.

The newsletter, christened The Circulator, had 16 pages of copy, illustrations, and art work. Cover colors varied each issue in the interest of attractiveness and reader motivation; the cover design was unique with each copy and illustrated the theme or medium of special interest for that month. (Appendix D)

Sources of Newsletter Information

Letters were written to 140 major producers and distributors of instructional media requesting information and illustrations of their products. (Appendix #E) The response from this source of information was gratifying; copy, illustrations, and actual samples of materials were received for use in the newsletter. Fifty-seven media companies provided copy during the project.

Schools in Area Six were requested to inform the Coordinator of interesting uses of instructional media in their schools. During the course of the project 19 articles from Area Six schools were received and included in the newsletter.

Visitations to conferences, conventions, workshops, and professional organizations were successful in soliciting articles written by well-known experts in the field of instructional materials and curriculum.

Members of the various Bureaus of the DPI, Lock Haven State College staff personnel, and persons affiliated with the Allegheny Educational Broadcasting Corporation wrote articles for publication.

Articles were abstracted from such professional journals as:

AV Guide	Educational Leadership
American Education	Educational Technology
Education Age	Nat'l Society Programmed Instruction Journal
Education USA	"The Newsletter" - Ohio State Univ.

The Contents of the Newsletter

An effort was made to include in the newsletter information treating a wide variety of instructional media, and uses of media in all subjects which are taught in elementary and secondary schools at every grade level. Table #5 indicates the breakout of subjects, grade level, and subject matter treated in the newsletter. Table #6 indicates the distribution of articles by type of instructional media. It should be noted that only major articles, written expressly about a particular topic, are listed in this table. Frequently minor references were made to several subjects within the same article; these references are not credited as separate articles.

TABLE 5. A TABLE SHOWING THE DISTRIBUTION OF ARTICLES APPEARING IN THE CIRCULATOR ARRANGED BY TYPE INSTRUCTIONAL MEDIA.

Instructional Media	Elem.(Only)	Sec.(Only)	Both	Total No. of Articles
Television	-	D,J^{2},F*	O,J^{10},F^{2},M^{3},A	22
Books and Pamphlets	-	D,A^{2}	O,D,F^{3},M,My	10
Films (16mm)	-	D,J,A	S^{4},D^{2},A	10
Overhead Projector	D	D	O,D^{4},My	8
Curriculum Guides	D,J	A^{2}	D,M^{2},My	8
Language Labs	O,My	O,F	F,M,A	7
Technology (General)	-	-	S,O,M^{3},A,My	7
Teaching Machines	F^{2}	F,M	F^{2},M	7
Programmed Instruction	-	My	F^{4},M	6
Audio-Visual (General)	S,M	D,My	O,M	6
Recordings (Records)	J^{2}	D	D,M	5
Programmed Textbooks	O	-	F^{3}	4
Models, Dioramas	M	D,M	A	4
Recordings (Tape)	-	-	O^{2},M	3
Films (Strip)	-	O	D,M	3
Charts & Graphs	S	-	A	2
Roleplaying	-	M	A	2
Computors	-	D	My	2
Musical Instruments	-	-	M	1
Maps	-	-	M	1
Films (8mm)	-	-	O	1
Films (35mm)	-	My	-	1

Table 5 (Continued)

Instructional Media	Elem.(Only)	Sec.(Only)	Both	Total No. of Articles
Feltboards	-	O	A	1
Flat Pictures	My	-	-	1

*Initials indicate the month in which the article appeared in The Circulator. The number appearing with the letter indicates the number of articles that month.

S=September
O=October
D=December & November (Combined)
J=January
F =February
M =March
A =April
My=May

TABLE 6. A TABLE SHOWING THE DISTRIBUTION OF ARTICLES APPEARING IN THE CIRCULATOR ARRANGED BY SUBJECT MATTER AREA AND GRADE LEVEL.

Subject Matter Area	Elem. (Only)	Sec. (Only)	Both	Total No. of Articles
Social Studies	S	O,D^3,F^3,M,A^3	D,M,My	15
Science	O	S^2,O,D^2,F,A,My^2	O,D	12
Technology (General)	-	-	S,O,M,A^2,J^2,F^2,M	10
English	F	D,F^2,M,A^2	F,My	9
Curriculum Guides (General)	M	M	J,A^2,My^3	8
Reading	S,O,F	J	A,My	6
In-Service Training	D^2,J	D,J	-	5
Music	S,J	J	S,M	5
Special Education	My	-	S,F^2,My	5
Teacher Education (Col.)	My	-	J,F^2,My	5
Guidance	M	O,F,M	-	4
Driver Education	-	M,My^2	-	3

Table 6 (Continued)

	GRADE LEVEL Elem.	Sec.	Both	Total No. Of Articles
Industrial Arts	-	D	F,M	3
Business Education	-	O,D,My	-	3
Home Economics	-	D,My	-	2
Foreign Language	-	-	D,F	2
Library Services	-	-	O,My	2
General Education	-	-	O,M	2
Curriculum (Staff)	-	-	D,A	2
Adult Education	-	-	J,A	2
Aerospace Education	-	-	My[2]	2
Vocational Education	-	M	-	1
Health & Physical Ed.	-	-	F	1
Art	-	-	A*	1

*Initials indicate the month in which the article appeared in The Circulator and the number appearing beside the letter indicates the number of articles that month.

S=September
O=October
D=December & November (Combined)
J=January
F = February
M = March
A = April
My= May

In each issue the readers were advised that more information could be obtained about any topic appearing in the newsletter by contacting the Editor of The Circulator or writing directly to the producer, distributor, or innovator. Services, e.g., workshops, consultants, etc. were offered to interested readers. In short, the newsletter did more than present ideas about instructional media; it also carried a standing invitation to educators to request assistance in using instructional media. This assistance was to be subsidized by the research project and was free of cost to the school district.

Distribution of The Newsletter

The Circulator was mailed each month to the schools and teachers in the dissemination patterns and to other interested persons and agencies. Eight issues were distributed including copies in September, October, November-December (a combined issue), January, February, March, April and May. The mailing list included a total of 2,155 addresses. During the 1965-66 school year 17,240 copies of The Circulator were distributed from the project center. A breakout of the mailing list is included in Table Number 7.

TABLE 7. A TABLE SHOWING THE NO. OF COPIES OF THE CIRCULATOR MAILED EACH MONTH BY DISTRIBUTION PATTERN

Number of Copies	Description of List
700	Distribution "A"
29	Distribution "B"
633	Distribution "C"
166	Distribution "E"
35	Distribution "F"
11	County School Superintendents
11	Assistant County School Superintendents
3	Area VI Advisory Board
28	Commercial Firms
23	Lock Haven State College Personnel
245	Parochial Schools
8	Akeley School Personnel
40	Department of Public Instruction (Mr. Rookey)
3	Pennsylvania State University Personnel
4	Regional Instructional Materials Centers
104	State College Area Schools
15	District School Superintendents

Table 7 (Continued)

Number of Copies	Description of List
83	Miscellaneous
11	Contributors of Articles
2,155	TOTAL NUMBER OF CIRCULATOR COPIES MAILED EACH MONTH

RESULTS

Reactions From the Schools

Written Requests for Information and Services From The Circulator Editor and From the Curriculum Center

In all issues of The Circulator, teachers were invited to request information and assistance relevant to articles appearing in The Circulator from the editor of The Circulator and the Curriculum Coordinator. Two editorials were devoted to this topic and in each it was made clear to the readers that materials and services could be made available to the schools through The Circulator and the Curriculum Center; it was emphasized that these materials were free. It was felt that a measure of the responses to these invitations would indicate reader interest in and knowledge of instructional media and curricular innovation.

Even though requests were solicited in each of the eight issues of The Circulator, no responses for services or information were received from teachers or administrators in Area Six.

Unsolicited Correspondence From the Schools

During the course of the project a total of six unsolicited letters were received by the editor which made some direct evaluation of The Circulator. These letters were received from six different school districts within Area Six, and in each case reflected the views of teachers and administrators relevant to The Circulator. Requests for additional Circulators were received from a number of schools in Area Six, and these requests were met with the exception of schools which were in dissemination patterns designated as schools not to receive Circulators.

Responses Through Business Reply Cards

In the final issue of The Circulator (May 1966) two business reply cards were included in each copy of The Circulator. (See Appendix #F)

Card #1 was designed to provide an opportunity for each reader to evaluate The Circulator and to make suggestions for its improvement. A total of 15 cards were returned. The results of these cards are shown in Table #8.

The second card asked the reader to indicate ideas and topics in the field of instructional material which he would like to learn more about and activities he would like to have provided in this regard.. The reader was also asked to suggest activities and topics that should be included in future issues of The Circulator. A total of seven cards were returned. A breakout of the responses is included in Table #9.

Oral Responses From Schools

Numerous oral comments were received from school administrators and teachers concerning the quality and contributions of The Circulator. Generally speaking the observations were positive and useful suggestions were made to improve and continue the publication of The Circulator. It was a concensus of those who commented on The Circulator that The Circulator should be continued in view of the "service" it was rendering to educators in Area Six.

Reaction From Instructional Media Persons and Others Outside Area Six

Reactions From Media Producers and Distributors

A generally enthusiastic reaction relevant to The Circulator was received from producers and distributors of instructional media materials and supplies. A total of 66 producers and distributors wrote to the editor of The Circulator making comments about the publication and requesting copies for their files.

Without exception, media producers who commented on The Circulator indicated a high regard for the newsletter from the standpoint of its function and quality. Copies of two typical letters from media producers are included in this report as Appendix #G.

Reactions From Associates In The Field

A total of 22 letters of reaction from professional people in the state were received by the editor of The Circulator and the curriculum coordinator. These reactions indicated that The Circulator was read by persons outside Area Six and that it was generally well received. Two copies of typical letters from professional people are included as a part of this report as Appendix #H.

Reactions From Other Sources

A number of organizations and individuals from outside the Commonwealth came in contact with The Circulator and wrote to the editor

TABLE 8. A TABLE SHOWING THE RESULTS OF THE BUSINESS REPLY CARD #1 FOR EVALUATION OF THE CIRCULATOR.

	Frequency			
	Never	Seldom	Occasionally	Often
1. During the past school year I found articles in The Circulator relevant to my teaching--.	0	0	4	7
2. Circulator articles relevant to my teaching were also useful to me in the classroom.	0	1	9	1
3. Circulator articles, generally, were interestingly written.	0	0	5	7
4. The editorials dealt with important problems in education.	0	0	3	7

5. The most valuable section of The Circulator was: From The Editor...1 Aids & Ideas...8 Instructional Media...3 Area Six Schools...3

TABLE 9. A TABLE SHOWING THE RESULTS OF THE BUSINESS REPLY CARD #2, TOPICS AND ACTIVITIES READERS REQUESTED.

A. Ideas and Topics requested:

Audio-Visual Aids & Equipment....3	Modular Scheduling.....1
Engineering Research Projects....1	Ungraded Programs.....1
Use of Multi-Media Materials.....1	New Projects.....1
Individualized Instruction.....1	

B. Activities Requested:

Name of Activity	Number of Requests	Name of Activity	Number of Requests
1. Workshops	2	5. Demonstrations	3
2. Conferences	2	6. Lectures	0
3. Visitations	1	7. Personal Assistance	1
4. Literature	5	8. Research Projects	2

C. Suggestions for future issues of The Circulator to carry information about these activities and/or topics.

1. Practical use of Audio-Visual Aids
2. Programs for low classes of Jr-Sr. High School
3. National studies in various subject matter areas
4. News of N.S.F.,N.D.E.A.etc.
5. TV Programs of Use of Circuit TV

requesting copies and offered complimentary comments concerning the publication. A total of 7 such requests were made from professional persons outside the Area Six. One copy of a typical letter is included as a part of this report as Appendix #I.

The Post-Study Survey

To determine the effectiveness and efficiency of the dissemination patterns a post-study inventory was administered to 708 teachers in 35 schools selected randomly by dissemination pattern. The instrument contained 35 items made up from articles appearing in eight issues of The Circulator (See Appendix # J)

Mean scores were computed for each of the patterns. (See Table No. 10) It was the opinion of the consultant statitician that the data did not warrant further analysis. That is, they felt that no significant differences among the patterns would be obtained.

TABLE 10. A TABLE OF THE POST-SURVEY DATA BY DISSEMINATION PATTERN

	A	B	C	D	E	F
Mean Scores	11.84	12.42	11.58	12.32	11.63	11.11
Standard Deviation	3.58	3.12	3.83	3.44	3.25	3.49
Number of Schools	4	6	6	6	7	6
Number of Teachers	82	124	100	115	120	167
Test Totals	970	1477	1272	1383	1403	1931
Median Scores	12.1	12.7	12.9	12.6	12.3	11.9

A. Copy to each teacher mailed to the school address.
B. One innovative teacher in each school receives a copy.
C. Each teacher gets a copy at his home address.
D. No copies were sent.
E. One copy to every 4 teachers, mailed to school address.
F. One copy sent to the building administrator.

Scores were recorded for each of the schools in the sample. (See Table #11) The schools were then divided into quartiles and the variables --schools with Audio-Visual Directors and schools with Curriculum Directors--were investigated. It was noted that schools without Audio-Visual Directors tended to score in the lower two quartiles and schools with Audio-Visual Directors tended to score in the upper two quartiles.

TABLE 11. A TABLE OF SCHOOLS WITH DIRECTORS BY QUARTILES

	Weighted Scores Quartiles	No. of Schools	No. Schools Received the Circulator	No. Schools w/Audio-Visual Dir.	No. Schools w/Curriculum Directors	Totals
High Scores	1	9	8	5	3	16
	2	9	5	7	4	16
	3	8	2	3	3	8
Low Scores	4	9	7	2	5	14

DISCUSSION

The suggested absence of statistically significant differences among the patterns of dissemination, based on mean scores obtained on the post-study inventory, suggests the dissemination pattern did not function as an independent variable. Teacher knowledge of instructional media did not vary significantly with dissemination pattern. The control group which received no copies, scored higher (though not significantly) on the post-study survey than four of the other dissemination patterns.

There are at least two possible qualifications upon which the post-study findings could be questioned: (1) the post-study survey instrument may not have been valid, and/or reliable; (2) teachers who did not receive The Circulator through the research project may have had access to its contents, from other sources.

Either or both of the above conditions would tend to reduce or eliminate differences among dissemination patterns as measured by mean scores on the post-study survey.

This project also did not specify the role of the Audio-visual Director in the local school. It was not realized at the outset of this project that these directors would have a logically defined role.

The failure of teachers to request consultant and other services through The Circulator seems to indicate a lack of interest in such matters. However, it is doubtful that not any of the 2200 teachers desired assistance with their teaching problems. It is perhaps more plausible to conjecture that teachers failed to "understand" the availability of services, or feared the assistance offer might simply lead to more work for them. Teacher indifference to the request for an evaluation of The Circulator via the business reply cards is a matter about which one can merely speculate.

In short, there is no evidence to suggest that teachers read and retained the contents of The Circulator. There is very little to

suggest teachers were at all interested in the publication.

CONCLUSIONS, IMPLICATIONS (AND RECOMMENDATIONS)

The results suggest that dissemination of information about instructional media is likely to be ineffective with teachers when one uses a monthly publication of The Circulator type. Teachers who had received eight issues of the newsletter knew no more about instructional media than teachers who received no copies.

Why this should be the case, cannot be ascertained on the basis of information now available. It is suggested that a follow-up study of this project be conducted with a view toward identifying variables which may have contaminated the findings of the study; or, finding none, to determine why the publication made no measurable impact on teacher knowledge of instructional media.

It is recommended that in the next phase of this project the roles of Audio-visual Coordinators and Directors be more fully investigated and workshops utilizing the skills of the local Audio-visual Directors be incorporated.

SUMMARY

This project was phase-one of a two-phase project designed to change teacher behavior with regard to the use of instructional media. This first phase focused on increasing teacher knowledge of instructional media through the circulation of a monthly newsletter to approximately 2200 educators in eleven counties of central Pennsylvania. Various dissemination patterns were used in order to determine the most effective and efficient pattern. Six different patterns were used:

A-One copy sent to each teacher at their school address
B-One copy sent to an innovative teacher in each school
C-One copy sent to each teacher at their home address
D-Control group (Received no copies)
E-One copy sent to the school address for every fourth teacher
F-One copy sent to the building administrator

The consultant statitician's opinion was that results of the study failed to indicate any significant differences among the patterns as measured by a post-study instrument. Other measures failed to yield evidence in support of reader interest or comprehension. Certain qualifications must be kept in perspective when the post-study survey data are considered i.e., the validity and reliability of the test instrument, contamination of the findings by information from sources other than the main publication.

It was noted that teachers in schools with Audio-visual Directors tended to score higher than those teachers without Audio-visual Directors. In view of this finding, it is recommended that any follow-up study would more closely define the role of an Audio-visual Consultant or Director, and include instructional media workshops.

In view of the findings of the study it is recommended that a follow-up study be conducted to determine reader reaction to the publication.

APPENDIXES

A. Participation Questionnaire

B. Pre-Study Inventory

C. Administrative Control Form

D-1 September Circulator
D-2 October Circulator
D-3 November-December Circulator
D-4 January Circulator
D-5 February Circulator
D-6 March Circulator
D-7 April Circulator
D-8 May Circulator

E. Letter to Producers Requesting Copy

F. Business Reply Cards

G-1 Letter from Producer (T. N. Hubbard Scientific Co.)
G-2 Letter from Producer (DCA Educational Products Inc.)

H-1 Letter from Individual (Mr. Howard F. Jack)
H-2 Letter from Individual (James F. Kehew)

I-Letter from Professional Person Outside Area Six

J-Post-Study Survey Instrument

Appendix #A

SCHOOL PARTICIPATION QUESTIONNAIRE

1. Name of your school _____

2. Address of your school _____

3. Grades included in your school _____

4. Number of teachers on your faculty _____

5. Name of principal or head teacher _____

6. Name of your curriculum director _____

7. Name of your audio-visual coordinator or supervisor _____

8. Does your school have department heads (or persons who serve in that capacity)? _____ Yes _____ No

9. Does your school participate in educational television? ___ Yes ___ No

10. Please name one teacher on your faculty whom you consider to be an "innovating" teacher _____

11. What is the size of the community in which your school is located?

Over 50,000	10,000 - 50,000	1,000 - 10,000	less than 1,000

Please return this completed questionnaire in the self-addressed, stamped envelope enclosed with the letter to:

Dr. E. M. Nuss
Project Coordinator
Lock Haven State College
Lock Haven, Pennsylvania
17745

Appendix #B

SURVEY QUESTIONNAIRE

Teacher Survey of Instructional Media

Please indicate in the appropriate spaces on the answer sheet your estimate of the number of times you use for instruction each medium listed below during a typical 20-day school month.

A-(none) B-(1-4) C-(5-9) D-(10-20) E-(not available to the teacher)

Sample Item:

	A	B	C	D	E
0. Study Carrels	0. //	//	//	//	■

1. Flannel or Felt Board
2. Filmstrips
3. Slides
4. 8mm films
5. 16mm films
6. 16, 33-1/3, or 78 rpm records
7. Tape recordings
8. Overhead Transparencies
9. Spirit duplications (Dittos)
10. Radio programs
11. Television
12. Teaching machine
13. Models, specimens, and dioramas
14. Posters and bulletin boards
15. Field trips
16. Charts and graphs
17. Pictures and cartoons
18. Opaque projector
19. Role playing or sociodrama
20. Intrinsically programmed textbooks

The following statements represent varying points of view about which there is some controversy in American education today. PLEASE assume no pse, but respond rapidly according to your degree of agreement with the statements listed below. Mark your answers on the answer sheet according to the following code:

a. VERY STRONG DISAGREEMENT
b. MODERATE DISAGREEMENT
c. NEUTRAL--NEITHER AGREE NOR DISAGREE
d. MODERATE AGREEMENT
e. VERY STRONG AGREEMENT

21. I need additional training in uses of instructional media.

22. If available, I would attend special workshops in media utilization.

23. Students do not become involved when instructional media is used in teaching.

24. The possible uses of instructional media are limited only by the imagination of the person directing this usage.

25. Wider acceptance of currently known instructional media is needed.

26. Proper use of instructional media can go a long way toward providing for individual differences in the learning needs of children.

27. I would rather just use a blackboard and teach a class than use most of the media gadgets available today.

28. The development of new instructional media is a waste of time and resources.

29. Only through instructional media can vicarious learning experiences be provided in the classroom.

30. The teaching of foreign languages in the elementary school lends itself particularly well to the use of instructional media.

31. The creative student is apt to be stifled by the extensive use of instructional media.

32. Provision for the purchase of instructional media should be included in every teacher's request to the school districts instructional budget.

33. The development of centers for instructional media in every school unit should be encouraged and facilitated.

34. The expense of most instructional media is out of all proportion to their educational value.

35. Recent innovations in educational media are not useful to the classroom teacher.

36. My use of new educational media has increased greatly in recent years.

37. Wider usage of currently accepted instructional media is needed in my school.

38. If surplus funds exist, which could be spent only for supplementary books or for more instructional media, the instructional media should be chosen.

39. Instructional media are too specific and have little adaptability for different teaching requirements or situations.

40. The use of educational media tends to subordinate the teacher's relationship with students.

41. The passive characteristic of learning by instructional media is not conducive to the most effective learning.

42. The use of programmed instruction will revolutionize the process of instruction as we know it now.

The following items are designed to survey information about instructional media. Place the identifying symbol for your response to each item in the appropriate space on the answer sheet.

43. A problem with using filmstrips in the classroom is:

    a. the difficulty in presenting to a group
    b. the dearth of filmstrip subjects available
    c. the inflexibility of pictures sequence
    d. the degrees of room darkening needed

44. Which of the following is the "most" practical size for a good still camera for personal and professional use by teachers?

    a. 35mm
    b. 2¼ x 2¼
    c. 4" x 5"
    d. 5" x 7"
    e. 16mm

45. Some of the costs of establishing numerous educational television channels throughout the U.S. have been underwritten by the:

a. Ford Foundation
b. Payne Foundation
c. Guggenheim Foundation
d. Sloan Foundation
e. Federal Communications Commission

46. The advantage of radio which recordings do <u>not</u> have is:

a. expense
b. immediacy
c. volume
d. two-way communication
e. reality

47. Which of the following does <u>not</u> usually describe a type of chart:

a. tabular
b. tree
c. flow
d. field
e. logic

48. In which of the following educational levels can the feltboard find <u>reasonable</u> use:

a. primary
b. intermediate
c. secondary
d. college
e. all of these educational levels

49. The principal role of educational television in the classroom is to:

a. enrich pupil experiences
b. bolster teacher weakness
c. decrease per-pupil cost

50. Parental permission for the field trip:

a. relieves the school of any responsibility in case of accident
b. is possibly most important as a school-parent public relations measure
c. places responsibility for accident solely upon the chief school administrators
d. protects the teacher from law suits by parents in case safety measures for the trip proved inadequate.

51. The <u>main emphasis</u> in "flat picture techniques" should be upon:

a. providing many pictures to meet individual differences
b. providing opportunities for careful analysis of picture content
c. providing opportunities for involving students in picture collection
d. promoting student use of pictures in their projects.

52. The easiest way for a teacher to enlarge line drawings contained in a book rapidly and accurately is to use:

a. the "grid" method
b. free-hand sketching
c. an overhead projector
d. the opaque projector
e. templates

53. According to film research which of the following is false:

a. increased learning results when viewers are told testing will follow film showing
b. motor skills may be learned through film viewing
c. a single showing of a film provided optimum learning
d. note taking during film showing should not be encouraged

54. Skinner type of "programming" provides the following step arrangement:

a. Multiple paths for various abilities
b. Multiple choice items to be answered
c. One path for everyone to follow
d. Large singular steps to be followed

55. Which of the following refers to maps?

a. conic projection
b. isometric projection
c. diascopic projection
d. triangular projection

56. A pattern which can be held against a chalkboard and its outline traced is a:

a. stencil
b. grid
c. projector
d. template

57. The advantage that silent filmstrips have over motion pictures is that they:

a. avoid distracting interruptions
b. can be shown at a rate which best suits the class
c. afford a higher degree of realism
d. are generally superior in technical quality

58. Which of the following usually has the least value as an attention-getting device in making posters and bulletin boards:

a. bright color
b. unusual shaped objects
c. large clear lettering
d. symmetrical arrangement of items

59. A printed cartoon usually:

a. presents both sides of an issue
b. cannot deal with controversial topics
c. takes sides in a controversy
d. discourages stereotyped thinking

60. Highly verbal students may be limited in learning from materials that have a set pace (motion pictureds, recordings):

a. because they usually can "take in" ideas faster than such materials present them
b. because highly verbal students are usually also the ones who learn best through symbolic materials
c. because unless such students are required to "wrestle mentally" with abstractions and symbols, they will not learn much
d. because anything that can be "pictured" can also be verbalized

61. You assign television "viewing" homework to upper elementary or high school students. Which of the following could be expected to result in the greatest benefit:

a. announce program title, channel and time. Tell students that they are expected to view the program.
b. develop a discussion guide sheet with the students for use during the broadcast. Use it as basis for class discussion
c. discuss a program in advance of its broadcast and suggest that students watch
d. list programs of various types and announce that they will be discussed in class.

Appendix #C

ADMINISTRATIVE CONTROL REPORT

SCHOOL CODE: _____ NAME OF SCHOOL: _____

NAME OF PERSON ADMINISTRATING THE SURVEY: _____

DATE SURVEY WAS ADMINISTERED: _____

ROOM LOCATION IN WHICH SURVEY WAS ADMINISTERED: e.g., CLASSROOM, AUDITORIUM, ETC. _____

NUMBER OF PERSONS WHO COMPLETED THE SURVEY: _____

LENGTH OF TIME USED TO COMPLETE THE SURVEY: _____

SIGNATURE OF ADMINISTRATIVE OFFICER: _____

NUMBER OF COPIES SENT: _____

RETURN THE SURVEY ANSWER SHEETS, THE SURVEY QUESTIONNAIRE, AND THIS ADMINISTRATIVE CONTROL REPORT BY SEPTEMBER 17, 1965 TO:

MR. C. HERBERT LARSON
CURRICULUM COORDINATOR
LOCK HAVEN STATE COLLEGE
LOCK HAVEN, PENNSYLVANIA 17745

****

- INSTRUCTIONS -
FOR USING THE ANSWER SHEET

1. Use a number 2 pencil only. Each person should have an extra pencil.
2. Select only <u>one</u> answer for <u>each</u> question. Use only answer spaces 1-61.
3. Erase completely any answer you wish to change.
4. Completely fill in the answer space selected.
5. Do <u>not</u> mark any spaces under class code, test code, or student number.
6. The information requested on the left side of the answer sheet does <u>not</u> need to be completed.
7. Do <u>not</u> fold, staple, paper clip, or put a rubber band around the answer sheets when they are returned.
8. Please mark on the outside of the return envelope "Do not Bend or Fold" and "Hand Cancel."
9. The teacher's name is <u>not</u> to appear on this answer sheet. Identification of individual teachers is not to be a part of this survey.

Appendix D1-D8

If all issues of the Circulator are not included in this report they may be reviewed in the master copies housed at the following locations.

U. S. Department of Health,
Education, and Welfare
Bureau of Research
Office of Education
Washington, D. C. 20202

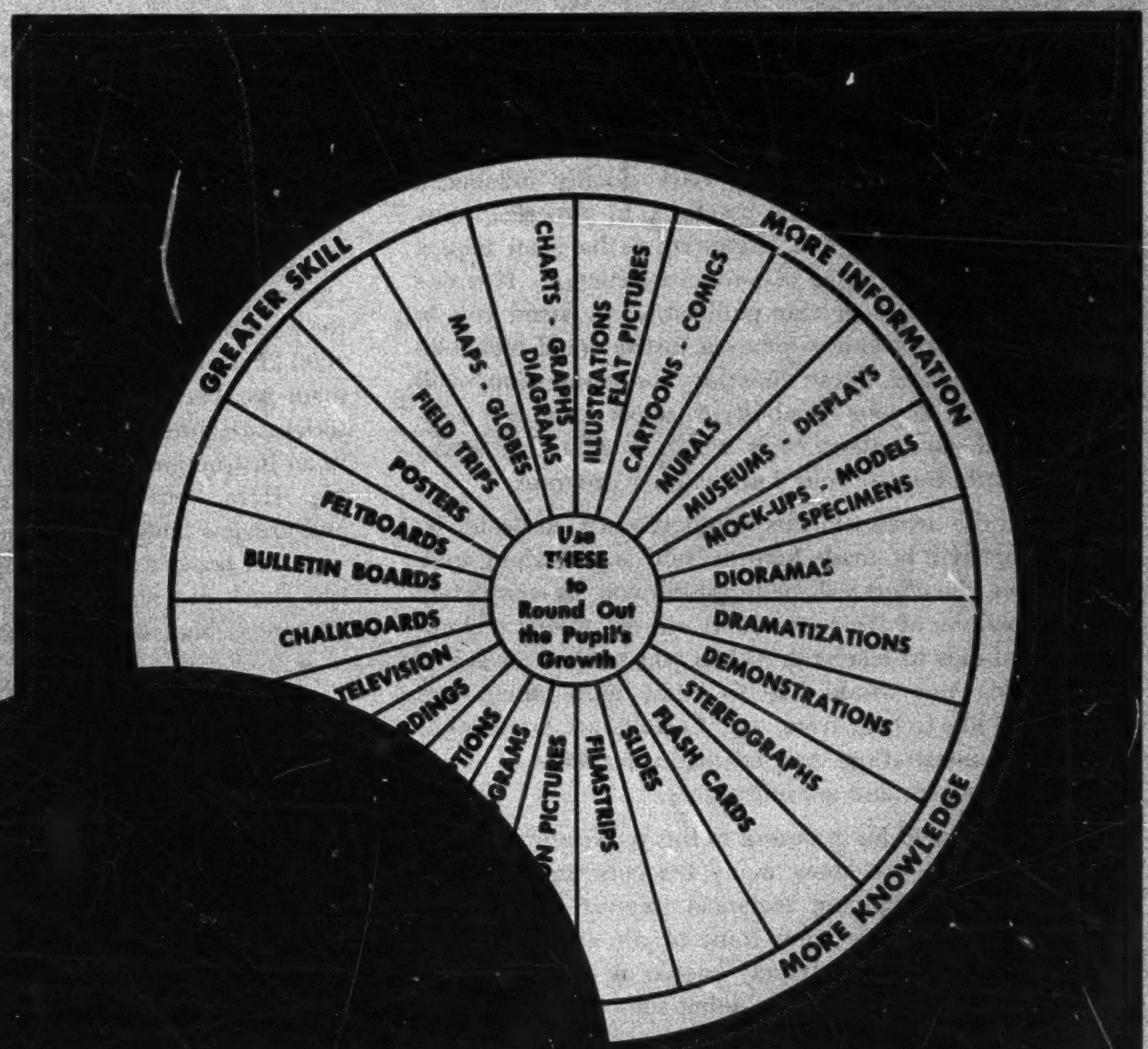
Department of Public Instruction
Bureau of Curriculum Planning
Box 911
Harrisburg
Pennsylvania 17126

Area Curriculum Center
Lock Haven State College
Lock Haven
Pennsylvania 17745

Stevenson Library
Lock Haven State College
Lock Haven
Pennsylvania 177456

VOLUME II, NO. 1

SEPTEMBER, 1965



CULATOR

AREA 6 CURRICULUM CENTER / LOCK HAVEN STATE COLLEGE / LOCK HAVEN, PENNSYLVANIA

AREA SIX COORDINATOR: C. H. LARSON

EDITOR: E. M. NUSS, D.Ed.

From the Editor—

Technology and the Teacher

Advances in technology have greatly influenced business and industrial practices in America; now technical innovation is beginning to have an impact on education through classroom instruction. It is one of the purposes of this publication to assist you in learning about and evaluating instructional technology. Hopefully, these monthly communications will contribute to your capability to select from new educational media those tools which you feel can make a contribution to your instructional program.

As the articles in this newsletter will indicate, no attempt will be made here to "sell" any teaching tool. Rather, the effort will be to inform you, as completely as possible, of the nature and use of various technological aids to teaching. When you read of an aid or an idea you would like to know more about, we should like to hear from you. Consultants, workshops, and demonstrations can be made available to interested teachers and administrators.

Not everything reported in this publication will be new to you; we know many teachers are presently involved in applying technical innovations to their teaching. Also, we know some of you are using tools and methods not commonly known or used by teachers, generally. If you are doing something relatively new, we should greatly appreciate hearing from you about these materials and/or technics you have found helpful; these, then, can be shared with other teachers.

We know you agree with us that instructional materials give shape and substance to the school curriculum and greatly affect the teaching-learning process. With this thought in mind we must accept the professional responsibility for knowing about promising innovations in instructional media. We are committed to assist you in this regard.

Instructional Media—

(New Ideas, Methods, Research)

Educating by the Use of Concentrated A-V

"Project Discovery" is a pupil and teacher centered research project which is using audio-visual materials as the primary element of instruction. The sole objective is to seek excellence in education by improving the process of instruction and learning.

By September, 1965, four strategically placed elementary schools will be involved in taking full advantage of a concentration of maximum audio-visual materials and equipment.

These schools will represent a cross section of varied socio-economic areas. Each school has been given a comprehensive, readily accessible library of the most current materials available for every subject area in the present curriculum (more than 500 16mm films and 1500 filmstrips). The latest autoload projection equipment has been installed in each classroom. The materials are integrated with books and other resources in an Instructional Materials Center within each building. Here, both teacher and student alike can study and preview materials independently; and, in the same way that books are loaned by the library, the children can check out audio-visual materials and equipment for after-school study at home.

There are no instructions being issued to teachers or pupils in connection with the Project. Instead, all are encouraged to use the materials in whatever way they wish. Only in this free atmosphere can we accurately judge what the effect upon the teaching/-learning process is when there is unrestricted access to a full library of audio-visual materials.

Research findings from such an environment might reveal accelerated learning, increased understanding, and improved instructional materials and techniques. Early report from Shaker Heights, Ohio, show an increase both in the use of audio-visual media, and of other media as well.

Teachers in Shaker Heights have reported (in the May/June, 1965 issue of *Grade Teacher*) many educational benefits: Self in-service training through the research and use of current films helps teachers to be aware of the explosion of knowledge. Science, social studies, vocabulary, and spelling at the second grade level are being taught in depth through motion pictures (fast and slow) and other visual media. Children at a very early age (age 7 reported) are able to be projectionists and to perform all the necessary operations, thus building confidence in the use of machinery. The multi-media approach (such as overhead projector, flannelboard, and chalkboard for one third grade math class or the use of a film, filmstrip, overhead projector, micro-projector, and biological exhibit for one fifth grade science class) is well received, accepted, and employed by experienced teachers when given the opportunity.

Encyclopaedia Britannica Films and Bell & Howell Company co-sponsors of Project Discovery will

make available the research findings to be issued on a regular basis for the next three years.

However, action in the classroom need not wait for research findings. *Immediate* use should be made of *all* instructional media available to you, and leadership should be displayed for increased purchase and use of equipment and materials. Instructional materials centers can become the hub of the school, and a film library in each school may be our objective. The teachers should not be the sole medium, but should be able to provide *many* means of presenting and sharing instructional materials and information in a creative environment.

Music For Every Child

Music plays a very important part in the complete education of each child. The ability both to enjoy and to produce music brings many benefits such as making life more enjoyable, building character, developing companionship and good will, making good citizens, and teaching democracy and values that are the foundation of American life. It also provides opportunities in concert work, orchestras, radio and television, and teaching

J. Win Payne, Past President of A.A.S.A., and Superintendent of Schools, Ponca City, Oklahoma wrote in the third edition of *Current Views on School Music*, (February, 1965) "The school's major concern is for the student's welfare, and its broad objective is to fit the music education program to the child. Unfortunately, some educators have tried to fit the child to the program. The real values in music education are found in the classroom — day-by-day experiences of learning, participation and enjoyment in the wonderful world of music. If the music program is allowed to veer too much toward specialization and departs radically from wide participation for many students, it will serve only a few of the many boys and girls who desire and need musical fulfillment."

There is no sound reason to limit music education and instruction to a few children who seem to have "talent." Only eight per cent of the children in America today are getting adequate music education in school, according to a nation-wide survey made by the American Music Conference.

A complete music education program begins with rhythm training in kindergarten, provides later on an understanding and appreciation of all kinds of music, and gives all children a chance to learn to play the instruments of their choice. This means that vocal and instrumental music teachers need to be provided at the elementary level. This will create the side benefit of released time for teachers for preparation purposes.

The chart on pages 4 and 5 prepared by the American Music Conference, Chicago, Illinois, shows how music will help to develop a child's personality, his ability to clooperate with others, his physical well-being, and his skills.

Coming Events—

WPSX-TV Offers Unusual Series

A 15-part series of educational television dramatic presentations based on the plays of William Shakespeare will begin September 28, 9:30 p.m. Titled "An Age of Kings" this Tuesday night program should provide excellent enrichment materials for students as well as interesting and educational viewing for the entire Channel 3 audience.

County Institute Plans for the Current Year

September 1 and 2 — Mifflin County at Kishacoquillas High School. The theme for Wednesday, September 1: The Emotonally Disturbed; for Thursday, September 2: The N.E.A. Project on Instruction, Schools for the Sixties.

September 14, 21, and 28 — Blair County will again substitute an in-service program for the traditional teachers' institute: 7:00 - 9:00 p.m., Tuesday, September 14 at Spring Cove High School, at a session for all teachers, Donald Taverner, Manager of WQED, will be the featured speaker. The high school teachers will meet in small seminar groups on successive Tuesdays beginning September 28 and ending October 26 at the Logan Area Junior High School to consider technical and professional subjects. All of the elementary teachers of the county are devoting themselves to a county-wide pilot study in the application of the new elementary evaluative criteria. Orientation meetings will be held from September 21 to 23 including planning sessions for the steering groups.

October 1 and 4 — Union County at Selinsgrove Area High School. The plan is for general sessions on Friday, October 1, and workshop sessions in subject matter fields for the secondary teachers and Educational T.V. for the elementary teachers on Monday, October 4, 1965.

February 24, 25 — Lycoming County and the Williamsport Area School District will conduct a com-

(Continued on page 6)

	CITIZENSHIP	SOCIAL RELATIONSHIPS	LANGUAGE ARTS	SCIENCE
SINGING	Patriotic songs inspire good citizenship, regard for country, emulation of great national figures.	Many songs inspire worldwide regard for other peoples. Songs of our own people broaden appreciation of our own country.	Good singing improves speech and diction. Foreign songs are a practical use of foreign languages.	Vocal techniques depend upon the understanding of some physiology and the physics of sound.
RHYTHMIC ACTIVITIES	Group planning, teamwork and individual expression is training for citizenship.	Folk dances and rhythmic activities are characteristic of many countries. They enhance the social studies.	Folk dancing is enhanced greatly when songs are sung and social graces are expressed in their native tongue.	A study of the elements affecting movement, i.e.: level, range focus. Rhythm and mathematics are related.
CREATIVE ACTIVITIES	Teaching children to be creative assists in making worthy, as part of good citizenship, leisure time.	Creative activities invite the study of other cultures as well as our own.	Creative activities related to music and to the spoken word make for practical application of proper English.	Making rhythm instruments (music with water glasses, etc.) is more a science study than a study of music.
RHYTHM INSTRUMENTS	Working in unity is a lesson in democracy-in-action.	Characteristics of peoples are often revealed in rhythms. The rhythm band is a means of emphasizing this.	An opportunity to study rhythms as they were used in communication — native drums, etc.	A cursive study sounds and sound fects—a study in physics.
MELODY FLUTES	All group effort requires the cooperation of the class. A lesson in good citizenship.	Flute, pipes have played an important part in the ceremonial life of early culture.		A study of the mathematical ratios of high and low tones produced by pipes is a practical approach to the study of sounds.
LISTENING	Appreciation of things cultural carries over in adult and community life.	The mores and folkways of many periods are reflected in the music, thus correlating social studies.	Listening makes use of foreign words. It piques the interest of students for further study of languages.	The principle of tone production on each instrument is a part of appreciation and science of music.

HISTORY	THE ARTS	READING	PHYSICAL EDUCATION	PERSONALITY DEVELOPMENT
ny songs enhance study of all periods istory. Many songs te to heroes or t historic events.	Efforts toward artistic expression in music make for appreciation of beauty in all art.	The technique of good singing is carried over to good reading — phrasing, etc.	The action song or singing game has long been a part of physical education.	Expressive singing is emotional experience that broadens personality and dulls undesirable inhibitions.
evolution of rhythic expression coinces with the develment of civilization.	Develops awareness of the elements of movement present in related arts.	A feeling of the rhythmic flow in singing improves reading ability. Choral speaking is a combination of singing and reading.	Rhythmic activities can bring relaxation thru a classroom day.	Bodily expression unshackles the spirit and draws personality into view.
studies can inle various applicas of music, with e creative opporities.	Creative work is a medium through which music is correlated with the other arts.	Dramatizing the song helps to give a feeling for the dramatic in reading. This helps in developing the imagination.	Music's creative activities calling for motion are also physical education.	Self-expression is part of personality development. Creativeness is a part of developing self-confidence.
development of ussion instruments arallel to the depment of civiliza-	Rhythm bands emphasize musical form. There is a relationship of musical form to painting, poetry, literature, and dance.		Precision marching and walking enter into many instrumental activities, all of which aid in development of coordination.	The group activities of music help to develop poise.
flute, being one of older instruments, a part of tribal monies, and used ourts of kings.	Ensemble playing is an art form better appreciated when an individual has the opportunity to participate.		Breath control and good posture are developed by music training . . both vocal and instrumental.	Musical skills develop confidence and build an extroverted personality.
t music has been enced in its crea- by historical ts, such as the of 1812, the set- of "America."	Appreciation of fine music is a basis upon which a discriminating taste may be developed for all the arts.	Contributes to the intellectual aspect of literature. Music is often related to great literature and drama.	Active as well as passive bodily activity enter into listening, par ticularly in the primary grades.	Developing taste for beauty influences the personality characteristics of the individual favorably.

(Continued from page 3)

bined institute program. The program is now being developed.

September - June — Cameron County by special permission of the D.P.I., will use their preparation for Secondary Evaluation by the Middle States Association as a substitute for the secondary teachers' institute.

In-Service Meetings

Mifflin County will conduct an N.D.E.A. in-service program on Reading in the Elementary and Secondary Schools. Faculty members from the Pennsylvania State University reading clinic will instruct two sections for two hours each for six evenings on the tentative dates of October 5 and 19, November 2 and 16, and January 11 and 25.

Area Six Schools—
(Events, Project, Views)

Reading in the Elementary School

Mr. Fred D. Herman, Assistant Director of Elementary Education, Clearfield Area Schools, describes their non-graded developmental reading program in the following article.

"Reading instruction in the Elementary Department of the Clearfield Schools is considered to be a non-graded developmental program. By a dvelopmental program we mean that the child is introduced to the various levels of reading skills as his readiness for them indicates that he can succeed. A child is no longer assigned to a reader because he is assigned to a particular grade level.

"Beginning with the reading readiness program in early Grade 1 the child is introduced to the Primary reading program and is assigned to a group where he will be instructed in the reading skills of a basal reading series. The teacher works with the group assigning and pacing the reading materials to fit the needs of the group. Often she will assign individual work to a pupil to develop a specific skill. As the teacher may request the levels of material she needs, most Grade 1 teachers will use the regular reading materials and other materials of Grade 1 level, including perhaps a second primer or a second level one reader. In Grade 2, as the pupils acquire more skills, the above average reader usually uses all of the level two reading materials and progresses into the level three reading materials. The average pupil in Grade 2 is given level two materials throughout the year. The below average pupil in Grade 2 uses level one reading materials for the greater part of Grade 2 and progresses into level two reading the latter half of the year. In Grade 3 the above average pupil usually completes the level three materials and much of the level four work by the end of Grade 3. The average pupil usually completes Grade 3 materials and perhaps a second level three book. The below average Grade 3 pupil usually completes Grade 2 materials and progresses into Grade 3 materials.

"The reading program for the intermediate grades becomes more individualized as the pupil is assigned to a test-workbook with a level of difficulty in which he can achieve a good degree of success. Once the pupil is assigned he proceeds at his own pace with the teacher guiding. instructing, and correcting his daily efforts. This program uses materials ranging in difficulty from Grades 1 through to the most advanced materials available. As in the Primary reading program, the school finds that the pupils have different rates of growth in the reading skills. One pupil may work through two or three levels of the program in a single year whereas another may need two years of instruction to achieve one year of growth in the reading skills.

"In addition to the reading materials which develop skills, the school also uses the *Weekly Reader*, a school newspaper, in Grades 1 through 6. As with the reading materials, it is recommended that the teacher purchase the *Weekly Reader* that best meets the instructional level of the pupil. Pupils are given many opportunities in the language arts curriculum to develop attitudes and interests in the published works of many types of authors. These include library books, poetry, dramatizations, choral reading, current events, etc. Each pupil in Grades 4, 5, and 6 is also furnished an elementary dictionary and introduced to the dictionary skills.

"Reading is evaluated on a day by day basis by the teacher. The philosophy of the classroom is that each pupil must perform to a high degree of success for continued growth. As the pupil completes each reading level, the teacher records this fact on a form which is a part of each pupil's cumulative record.

"Standardized tests are administered each September and March to measure growth in the broad areas of vocabulary and reading comprehension. Grade equivalents from these tests are recorded on the pupil's permanent record card. These scores indicate how well the pupil is developing in relation to pupils from school systems throughout the nation."

School Organization for Individualization of Instruction

The following excerpts are taken from the written statement prepared by Mr. Harry S. Heil, Supervising Principal of Curwensville Jointure, for the Area Six Jcint Conference on the "NEA Project on Instruction."

His comments are based on the "Schools for the Sixties" decision area #11 — Organizing the School and the Classroom, and recommendations #23 - #27 which are concerned with making the most effective use of the time and talents of students and teachers.

"I am primarily concerned with individualizing instruction. There are actually two major factors affecting this more than anything else. First, the teaching staff must be trained properly and imbued with a disposition to keep conscious of the individual child. Secondly, we can best effect this by reducing the pupil load.

"It is evident, from even a casual reading of the Recommendations, that we are encouraged to apply the psychological and pedagogical truths which research has achieved and to continue research in discovering others. To a large extent, pressure to maintain the status quo, has resulted in practices established to serve the selected groups of the 1920's being carried over to the day when all are not only in school but must legally be there. We seem unable to accept the fact that all of the children are in the schools and that the wide range of differences require something more than the lecture or conference methods in all classrooms. We must be courageous enough to break from traditions and to destroy all forms of inhibiting regimentation.

"Let us give several examples. Look at Grade 1. Here we have most children who will be 6 years old prior to February 1. We know that their M A's will tend to range from 4 to 8. If we were to substitute children with comparable C A's in first grade and invite *this* pressuring public to look at them, they would immediately say that we were crazy. 'The situation is impossible. You must do something about this.' It seems to be our chief goal — to regiment these children, get them all to the same grade level as soon as possible.

"The truth is, however, that this tradition cannot be destroyed by direct administrative action. It must be done without arousing unfavorable public sentiment. This can be achieved through a reading program which should start in the kindergarten and extend through the 6th grade. Each teacher would teach two reading levels. These 14 levels of instruction would be designed to cover by the sixth grade what would normally be offered by the 8th grade.

"The schools should be organized so that two 30-minute periods, moduals of 15 minutes each of reading time would be clock-controlled throughout each building. This would be done to effect grouping of children for reading on an all school basis. Those in grade 2 might go to a teacher of 4th grade who teaches reading levels 8 and 9. Groups should be adjusted in October, December, February, and April. No change should be made in June because of the recess during the summer months. You see, we would be taking the first step in breaking the traditional preparation for all children in June to move to the next grade.

"The philosophy in such a course of study would read: 'We commit ourselves to encourage our pupils to become accelerated in their reading abilities. The extent that we effect better individualization in our reading program and provide for the acceleration of the child according to his growth pattern, our program will be effective. Individualization of instruction is achieved in direct proportion to the degree that a teacher acquires a total understanding of the child and a knowledge of the outcome to be attained.'

"Let us look next at the secondary school. The school must be reorganized — harmful regimentation must be discontinued. I suggest that yearly schedules be discontinued; that bell systems be abandoned and that schools be organized in moduals of time based on 15 minutes; that each instructional area be broken down into 4 or 6 week segments; that the schedules be prepared administratively in allotments of time; that teams of teachers and clerical personnel make up schedules in the subject areas, according to the nature of the instructional programs; that the explanation and demonstration phase for larger groups be by TV; that the application and evaluation phase be by small groups as the pupils' needs demand; and that children be given their own opportunity to live their lives as they demonstrate their ability to control themselves and to sustain themselves in their progress toward positive goals."

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF PUBLIC INSTRUCTION
LOCK HAVEN STATE COLLEGE
Lock Haven, Pennsylvania 17745

U. S. POSTAGE
PAID
Permit No. 92
Lock Haven, Pa.

Aids and Ideas—

The Disadvantaged Child

A series of documentary style films examines the life of a young boy, Tommy Knight, and vividly describes the life of the culturally disadvantaged student.

These films are especially helpful to in-service teachers in providing suggestions for teaching disadvantaged children. Social workers, and community leaders will find these aids useful.

The films are by .....McGraw-Hill Dept. — Films
330 West 42nd Street
New York 36, New York
Length of films: 16 to 18 minutes
Black and White 16 mm
$135.00 each

Atomic Absorption Spectrometry

A technical film which describes the origin and principles of atomic absorption spectrometry is now available FREE to schools and other groups. The film also describes the many uses of atomic absorption and the instruments used.

Write to: Jarrell-Ash Company
590 Lincoln Street
Waltham, Mass.
16 mm. optical-sound and 8 mm magnetic-sound color prints are available.

Of Man and Minds

A new film showing unusual types of research being conducted to discover causes and cures for heart disease. FREE

Write to: Associated Films, Inc.
347 Madison Avenue
New York 17, New York
Length of film - 28 min. Color 16 mm.

Marty the Mongol

Do you know how pencils are made? Do your pupils? Eberhard Faber has created an animated pencil, Marty, who will conduct you and your pupils on a tour of a modern pencil plant — by way of a nicely done wall chart, of course.

Marty is designed to appeal to elementary pupils; however, another chart, "How a Mongol is Made," is more advanced and will be attractive to older students.

Both charts are available in 17½ x 22½ and 8½ x 11 sizes. FREE

Write to: Eberhard Faber Pen and Pencil Co., Inc., Crestwood, Wilkes-Barre, Penna. 18703

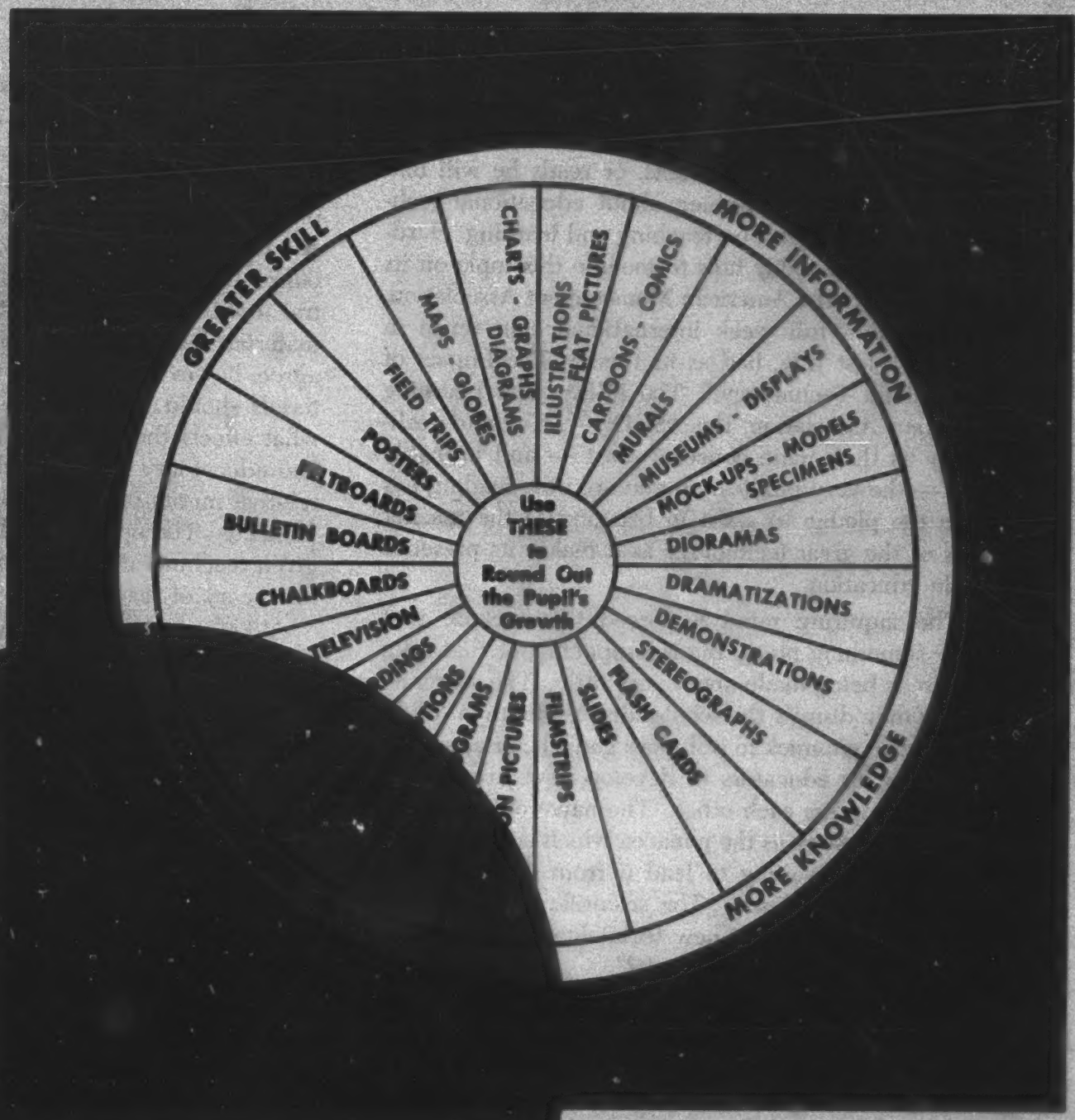
Motivational Music Film

A motivational motion picture has just been completed to instill a desire on the part of classroom teachers to seek in-service help to become more effective teachers in the elementary classroom music program. Accompanying this film is a booklet that describes approaches in carrying out some of these activities, e.g., making use of the piano keyboard and correlating it with the bells and autoharp as a visual aid to teach music fundamentals. This film is available on loan, FREE of charge, beginning this fall, from American Music Conference, 332 South Michigan Avenue, Chicago, Illinois 60604.

The emblem appearing on the cover of the CIRCULATOR is through the courtesy of AMERICAN SCHOOL AND UNIVERSITY Purchasing Guide, 1962-1963, copyright Buttenheim Publishing Corporation.

VOLUME II, NO. 2

OCTOBER, 1965



CULATOR

AREA 6 CURRICULUM CENTER / LOCK HAVEN STATE COLLEGE / LOCK HAVEN, PENNSYLVANIA

AREA SIX COORDINATOR: C. H. LARSON

EDITOR: E. M. NUSS, D.Ed.

From the Editor

THE NEW EDUCATIONAL TECHNOLOGY: ITS APPLICATION

Wherever one looks, listens, or reads he will find somebody saying something about educational technology and its impact on teaching and learning. Hardly a conference today fails to include this topic on its agenda. Even the American Management Association, which held a full week international conference in New York last July, had as its theme "The Impact of Educational Technology." The PSEA, The Learning Resources Association, the ASCD — all regard technology as their main concern. Last — and probably least — the very publication you are now reading has taken the pledge to assist in bringing to the teacher news of the great technology as it makes its presence felt in education.

The inquiring mind is forced to conclude that either something pretty big is happening, or that a lot of noise is being made about very little. The seasoned skeptic may dismiss the whole idea as simply a Madison Avenue gimmick to sell more gadgets, or as simply an excuse for educators to develop new jargon with which to impress each other. The naive optimist may regard technology as the panacea which education has been eagerly awaiting to lead it from the dark ages to the new renaissance. The scientific minded, however, ask, "What is the new technology? How can it help? How can we best use it?"

Not even a U.S. Office research grant could buy the services and manpower to answer completely the questions raised above; just a cursory study of the literature indicates that all the data are not yet in. However, some enlightenment is available, and one need not adopt the extremist attitudes referred to above. What, then, do the "experts" seem to say about the new technology?

It appears to us that there is a consensus among those who write and discuss the topic that educational technology refers to more than nuts and bolts, push buttons and gadgets, teaching machines and even audio-visual materials. The technology we read about is concerned with bringing the scientific approach to education, i.e., the application of scientific principles to the business of teaching and learning, not only through tools, devices, and machines for teaching, but through the *ways* of teaching.

The new technology, then, is concerned with research, and development of, teaching materials and their appropriate uses — uses that will help education move toward its objectives.

How technology can best be utilized in the learning environment is yet to be determined. One can read a wide variety of responses to this question, especially among educational psychologists who explore teaching methods and learning processes. The *AV Communication Review*, (September, 1961) discusses Learning Theory and AV Utilization as its central topic. Contributors to the *Review* agree that AV materials have a place in the classroom. They cannot agree, however, on how, or to what extent, these materials should enter the teaching-learning process, or what effects their use will have. Other psychologists and educators express equally divergent views on the relative merits of television, programmed instruction, films etc. The opinion of the expert with regard to a given teaching aid or technic seems much a matter of his theory of learning.

Where does all this leave the teacher, the curriculum director, the administrator? Should they avoid educational innovation? Should they ride the bandwagon that is popular at the moment? Or might they better gear their programs exclusively to economics and invest only in what happens to be most heavily subsidized at the moment by the state or national government? Obviously, none of these solutions is adequate for the educator who is seriously interested in good education; for him, better guidance is needed.

We suggest that this guidance can be obtained through an understanding and application of the basic tenets of the scientific method, as the term is used in its broadest sense. We believe that the evaluation, selection and application of any aspect of the developing technology for educational purposes must be consistent with basic principles of curriculum development as suggested by the scientific method. The implementation of these principles with regard to the task of exploiting technology for education must begin with two basic questions:

1. What are the goals of the education program? That is, what kinds of behavior should the learners develop?
2. Will the technological innovation under consideration help reach these goals?

To answer the first question requires the greatest degree of imagination and effort the profession can muster. It is not sufficient to state educational goals in high-sounding philosophical terms. Broad generalizations and ideals must be reduced to terms descriptive of specific human behavior. Only then is program-evaluation possible. This is no mean task, but it must

be attempted if education is to gain maximum benefit from the "new" technology.

Once meaningful goals are established, valid criteria for evaluating the contribution of a technological innovation begin to take shape; hypotheses can now be stated and tested. At this point research action becomes necessary on all levels of educational endeavor, and it is in the area of research that the modern educator should be most encouraged.

Research today is promoted and subsidized as never before in the history of education. The NDEA has poured millions into research in education. The 1965 Elementary and Secondary Education Act has set aside 100 million to establish huge regional learning laboratories across the country. The Pennsylvania DPI is encouraging the development of experimental learning centers at the State Colleges. These programs are expected to produce the sophisticated research so badly needed in the interest of increasing our knowledge about learning.

Perhaps even more important, however, is the research effort that can be made by school districts cooperating among themselves, by the individual district or school, or even in a single classroom by one or a team of teachers. The purists could argue that research is not possible in the typical school of America. Perhaps not, if one thinks of research only as it is conducted at its most highly developed level. But it is this writer's opinion that carefully introduced, closely observed experiments in the use of educational media are possible and desirable in every school district in this Commonwealth. If educators followed the NEA recommendation that one per cent of the budget be used for research, this ideal could be realized over-night. Even with a much smaller expense, most school districts could permit modest experiments in their schools.

What this writer has tried to say, is that the new technology offers the educator a vast array of media and technics. Where schools once had only textbooks and chalkboards, they now have access to television, projectors, programmed learning devices, etc.

It is up to the professional expert to decide how this technology can best be used. To do this he must continually examine the results he seeks and apply the scientific approach to the selection and use of the media available. This is asking a lot, but he can expect a good deal more assistance than before from the growing body of knowledge made available by research. He must also rely more on the involvement of his staff in the careful study of materials and ways of teaching within the school.

We believe it rests with the profession to determine whether the new technology becomes servant, master, or simply opportunity ungrasped.

Instructional Media
(New Ideas, Methods, Research)

A SCIENCE/MATH DISCOVERY WORK CENTER

Many educators regard the emphasis on the "new math" in the elementary grades as the ideal opportunity to help youngsters grasp the relationship of mathematics to science.

It is for just this purpose that the Science/Math Discovery Work Center has been developed by E. H. Sheldon Equipment Co., Muskegon, Michigan. This new student table is the nucleus around which an endless variety of science-related activities may be generated.

The top of the Science/Math Discovery Work Center is the familiar diamond shape which many science educators associate with Sheldon's Total Experience Science Table. This shape provides greater table top work area for each pupil, plus maximum freedom of floor area.

It is the imprinted top, however, and not the shape alone that accounts for the many educational opportunities available to youngsters. The top is high impact white plastic. It is imprinted in black with the following: square foot/square inch grids, 3-decimeter-centimeter grids, English/metric scale, 360°/2-180° protractor, and extended protractor points.

These imprints provide the mathematical bases for all math and for quantitative treatment of science. With them pupils can arrange, manipulate, and structure their own investigations. Through measurement of objects, through the experience in relating measurements from scale to scale, they discover that what they considered as mere numbers are actually keys that unlock many secrets of science. Pupils can work singly or in groups, writing their investigations and findings directly on the table, if desired, with grease pencil. The table wipes clean easily.

The experience of discovery, so illuminating to minds at the elementary grade level, is stimulated by other facilities at the Sheldon/Math Discovery Work Center. A connecting annex is equipped with a variety of science discovery aids. Included are an illuminated "teaching tower" for showing transparencies and opaque instructional materials, upright rods which fit into bases to provide means of vertical measurement and to support display materials, and a variety of corkboard and chalkboard display panels. Storage in the table and annex is provided for student project materials.

The Science/Math Discovery Work Center is the principal unit in the complete line of Elementary Science/Math in Dimension facilities made by Sheldon. Complete details are available by writing to American Seating Co., 901 S. Trooper Rd., Norristown, Penna.

Pupils use the Science/Math Discovery Work Center

THE NEW "8"

One of the most interesting of all instructional media developed by the new technology is the 8 mm film. Not merely a miniature 16 mm, the new 8 mm is opening new possibilities in both film form and content. Researchers at the Horace-Mann Lincoln Institute of School Experimentation suggest that ". . . it (8 mm film) can change the motion picture from the most difficult to among the simplest of all pictorial media to use."

The projected success of 8 mm as a classroom medium is based primarily on its accessibility to the teacher. No more worries about threading, since the 8 mm film is packaged in cartridges simply inserted and shown. Practically no technical skill is required to operate the projector — preschool children have been taught to "turn the right button" in about one minute. 8 mm equipment and prints are relatively cheap and compact: commercially produced 4-minute films in cartridges cost from $5 to $20. Self-contained rear screen projectors are available which makes room darkening unnecessary.

Although longer films and sound are available for 8 mm use, the most intriguing use of this medium is in the single concept cartridge technic. Here a student or small group of students, with or without the aid of a teacher, may view a concept as part of their regular instruction, as review work, as a committee task, or simply to get a better understanding of an idea with which they are having difficulty. It would appear that only the imagination of the teacher limits the use of this technic.

In an interview and demonstration of the 8 mm equipment, Mr. Ralph Dessenberger, Instructional Media Specialist at Lock Haven State College, pointed up several of the more obvious merits of this approach:

1) It makes individualized instruction through the film medium practical.

2) Small group study and discussion of a "concept" or problem is easily arranged.

3) Students and teachers can actually produce films at very low cost and without acquiring involved technical competence.

4) The 8 mm approach encourages concept teaching and the development of concept libraries.

Nobody can now say how important the 8 mm development in education will be in the long run. It does seem to be useful in every area of the curriculum, and at every grade level — kindergarten through graduate school. Its emphasis on teaching concepts seems well designed to assist the teacher and learner in the challenging task of organizing the explosion of knowledge into meaningful units.

There are currently available over 4,000 titles of single concept 8 mm films, commercially produced. The Horace Mann-Lincoln Institute estimates that last year 50-60,000 8 mm projectors were used, primarily in schools and businesses. If sufficient schools are interested in the new approach perhaps a demonstration can be held here at the College. Or, for further general information regarding 8 mm film equipment and technics write to:

The Project in Educational Communication
The Horace-Mann - Lincoln Institute of School Experimentation
Teacher's College Columbia University
New York, New York 10027

STOP, RECORD, AND LISTEN

By Dr. Marcus Konick, *Director Bureau of Instructional Materials, Pennsylvania Department of Public Instruction*

There is hardly a school on the continent which does not have a tape recorder available. It is probably the most creative of all audiovisual aids to instruction. It is the only convenient, light, comparatively inexpensive, and easily controlled means of recording sound. It is therefore amazing that so little use has been made of it in the classroom.

Prepared audio tapes are now readily available. They can be used as one would a disc recording, with the additional advantage that they do not deteriorate with use. Tapes can be secured for almost every subject area and for almost every level of instruction. Commercial monaural and stereophonic recordings can be purchased. The National Tape Depository offers a wide collection at a very reasonable fee. The Pennsylvania Department of Public Instruction has just assembled a collection of over 1,200, will shortly issue a catalog, and will reproduce any free upon request, using your tape. Many of these are intended for radio use and may do much to redeem that potentially valuable but much neglected medium.

However, because of the ease of recording and reuse, most teachers will want to use tape recorders more creatively.

The simplest is the possibility of recording disc, radio, and television (audio portion) programs. In this way significant public speeches, music, and other materials can be recorded and stored for use at convenient times. The social studies teacher will want to preserve speeches of the President, political debates, news broadcasts, and panel discussions. The language

arts teacher will record plays and speeches of writers and critics. The science teacher will avail himself of the opportunity to bring living scientists and contemporary scientific issues into the classroom. The teacher of music will be able to bring his students the best of broadcast and recorded music. There is hardly a subject area which cannot benefit. One should, however, be aware that recording a commercial production may be illegal. Generally, however, if only classroom use is intended, no problem will arise. Problems will normally develop only if the recording is used when admission is charged.

There are many other uses. The normal and abnormal beating of the hearts of children and adults — or of birds and animals — can be compared. If there are many complicated sound effects in quick succession required in a play, all can be recorded in advance and there is no danger of deterioration with use, or of breathing noises, or of mixed cues. In a language laboratory, many good native speakers can be brought into the classroom, and students can become more competent in foreign language conversation.

The tape recorder can be used as a culminating activity. This experience will be especially valuable if the teacher and pupils jointly work out some ground rules covering such things as the amount of time to be allotted, judicious selection of the most significant items to be recorded, and requisite excellence of speech or performance. Careful preparation should be required. The writing of scripts can provide stimulation for mastery of composition skills. For speech; good enunciation, correct pronunciation, and meaningful variety of pitch, speed, and volume can be stressed. Even the selection of appropriate musical background and sound effects will encourage careful listening, appreciation, and self-discipline. Plays, poems, discussions of all types, musical performances, and simulated radio broadcasts can be recorded.

It is, perhaps, in the development of skills that the tape recorder is most frequently used in classrooms. Accomplished artists like Marian Anderson evaluate their performances in this manner. Purposeful work and critical listening are encouraged. The language laboratory utilizes these principles in many types of exercises, which have been well analyzed by experts. But the recorder can also be employed to develop good speech habits, singing and instrumental ability, and the like. The tape recorder can also relieve the teacher of stenography of the monotony of dictation.

There are bonuses, too. The teacher can prepare and polish his material in advance. He can double his usefulness in the classroom by working with individuals while the recorded materials are used by the remainde. of the pupils. In such a situation he can also observe the effectiveness of his taped presentation, note pupil problems in handling it, and then improve his technique. In addition, he can individualize instruction, and, by use of several recorders, offer both remedial and advanced material to pupils at need. Material can also be provided to students during study periods, recess, or after school, or at home if the pupils own instruments. In recognition of the usefulness of this approach, many modern school libraries stock tapes as well as books and provide listening posts.

It is also appropriate to point out that many teachers have had little special instruction in use of their most important teaching tool, their voices. Each teacher should record his voice frequently and note his needs. Tapes can, of course, be kept and progress noted. For economy they can be erased and re-used, almost without limit.

The key to profitable use of the tape recorder lies in recognition of the necessity for teaching critical listening at all grade levels and in all subjects. The hierarchy of skills to be learned runs the full gamut: repetition of what has been heard; identification of the speaker or instrument; following spoken directions (given once only); answering questions directly and to the point; recognition of the speaker's point of view; outlining of speeches; recognition of the structure of a speech as definition, or illustration, or proof, or sequential narration; awareness of the difference between fact and opinion, of the significance of voice tone and of good speech habits, of defects in reasoning; testing the accuracy of statements by the yardstick of experience; and recognition of the need for further investigation. These skills underlie all listening functions, whether utilitarian, appreciative, or creative. They need to be taught deliberately, for all too often they are neglected altogether. The tape recorder makes specific preparation and repetition of the materials possible without change, thus permitting meticulous analysis.

Of course, any device can be abused. Criticism can stultify, just as it can teach self-discipline, offer encouragement, and inspire creativity. Perhaps the tape recorder is somewhat less susceptible to misuse because it enables the teacher to observe the learning process from an especially detached point of view.

Only the resourcefulness of the teacher limits the effective use of this modern electronic tool in learning. Its availability and versatility make it one of the most desirable instructional aids, for it can be as utilitarian or creative as one may desire. Its use is almost a hall-

mark of good teaching, for its frank honesty offers great reward to the pupil or teacher who will stop to use it, who will record with clearly defined purpose, and who will listen with objectivity, preception, and a desire to improve.

BUSINESS EDUCATION VIA MAGNETIC TAPE

The DeJur-Amsco Corporation is now offering a brand-new dictating machine transcription course for school students. The course is pre-dictated on Stenerette magnetic tapes which can be used for student practice purposes.

The course is organized into three parts:

1. Introductory — Secretarial practice in general business correspondence.
2. Intermediate — Practice in common office forms and office routine.
3. Professional — Practice Manual for legal and medical secretarial specializations.

In addition to the tapes, a student manual for each of the three parts, and an Instructor's Guide are included.

For further information regarding this program, write to:

Educational Department
Business Equipment Division
De-Jur Amsco Corporation
45th Street and Northern Boulevard
Long Island City, New York 11101

BOOK SERVICES FOR SCHOOL LIBRARIES

The Book Services Division of Bro-Dart Industries offers a book jobbing service which makes available to schools books from over 2400 publishers. A great advantage in using this service is that a library can place a single order to Bro-Dart for all the books which it requires. Also, through a cooperative program with the Library of Congress, Bro-Dart is able to supply complete sets of Library of Congress cards with virtually all of the 60,000 titles they stock.

Complete cataloguing and processing services are offered by the Alanar processing center, Division of Bro-Dart, through a book-kit program. Included in the kit is an annotated book pocket, a book card, a complete set of catalog cards, a spine label, and a lifetime book jacket cover. Over 10,000 titles in publisher's library bindings are available with book kits completely applied by the Alanar center and ready for shelving. This program also permits schools to process their own books, completely or partially, after they have been received, since the kit is available loose for application by the school librarian. This flexible arrangement permits a library to make cataloguing consistent with material already on the library shelves. This arrangement is most economical for the school and requires a minimum of effort on the part of the librarian. At present, this flexible service is available to grade levels K-8; soon it will be expanded through grade 12. A catalog listing all of the titles in this program is available from Bro-Dart.

Nothing is more important to a library than a well balanced book collection. Educators continually request that a school-oriented list be representative of all topics included in the elementary curriculum. An independent professional committee of nine specialists in various areas of children's books has undertaken to prepare such a list. This completed list, THE ELEMENTARY SCHOOL LIBRARY COLLECTION, includes more than 5,000 titles. This number meets the standards set up by the American Association of School Librarians as a minimum essential for a single library serving 200 or more students.

A special feature of this collection is its program for constant updating. Under the chairmanship of Miss Mary Gaver, Professor of Library Science, Rutgers University, a committee will review new books as published and prepare interim supplements during the year. To keep the librarian informed of current publications related to the basic balanced list, the new catalog will be revised yearly. All titles in this collection are available through the Bro-Dart Book Kit program, described above. A brochure describing the Elementary Library School Collection is available upon request.

Another interesting and valuable service offered by Bro-Dart is their inexpensive rebinding of paperback books. With the now extensive use of paperbacks in our public schools, this service should make a considerable economic contribution to a school's book-acquisition program.

For further information, write to:
Bro-Dart Books
Box 923
Williamsport, Penna.

A BIO-WORK CENTER FOR SECONDARY SCHOOLS

A completely equipped work center is one of the new facilities developed for biology study by the E. H. Sheldon Equipment Co. of Muskegon, Michigan.

Sheldon's "Bio-Work Center" is designed to aid the modern secondary school achieve the objectives set forth in the Biological Sciences Curriculum Study. In a single compact unit, measuring 83" high x 63"

wide x 27" front to back, the Bio-Work Center incorporates the following:

(1) A Bio-Temp unit in the upper portion, providing a chamber with temperatures controlled within the most commonly used incubation range.

(2) A Bio-Therm unit in the lower portion, offering a range of low temperatures.

(3) A work counter between these two controlled temperature units.

The upper Bio-Temp cabinet permits the development of micro-organisms which can survive and flourish only at certain temperatures such as +22°C., +30°C., +37°C., and +39°C. These and other temperatures can be established and maintained by externally located electric controls. Relative humidity within a range of 50% to 70% also can be controlled. The cabinet has two doors, one of which is glazed so students and the instructor can observe the interior without disturbing the environment.

The Bio-Therm cabinet at the bottom consists of two separate units: a —18°C. freezer, and a refrigerator with a range of —18°C. to +21°C. In addition, the refrigerator has an upright divider which makes one section available as a conventional refrigerator while the other may be used as a gradient chamber. Externally located controls permit maintaining varying levels of temperature simultaneously in the gradient chamber.

The work counter accommodates a variety of projects associated with the biological specimens kept in the two controlled temperature units. Among these projects are slide preparation, paraffin embedding, staining, preparation of tissue, and microscope study.

Detailed literature is available by writing to:

American Seating Company
901 S. Trooper Road
Norristown, Pa.

CONTRIBUTION TO PENNSYLVANIA HISTORY

The Historical Foundation of Pennsylvania has dedicated itself to saving much of Pennsylvania's priceless heritage. Its offices are in the state's new William Penn Memorial Museum at Harrisburg.

The Historical Foundation concentrates its work in four areas: education, historic sites, historical objects, and research and publication.

Its objectives for 1965 include the following:

(1) A mobile museum on a tractor-trailer, to traverse the entire state, reaching especially small schools out of range of settled museum facilities. The vehicle, valued at $25,000, has already been donated, leaving a need for $50,000 for equipment, materials and personnel as the largest single item in this year's budget.

(2) Providing 2,000 copies of a new history, "Pennsylvania — Birthplace of a Nation," by Dr. S. K. Stevens to be given to all school and community libraries. The publisher, Random House, is making these available at cost.

(3) Pennsylvania History and Government museum loan kits, to be distributed through the Department of Public Instruction, and the loan services of the William Penn Memorial Museum. These will include documents, pictures, pamphlets, film strips, tape recordings and models, with guides.

(4) Preparation of a Dictionary of Pennsylvania Biography, for the benefit of libraries, newspapers, schools and other educational and communications facilities. Such a work has long been needed, and is planned as a two-volume publication.

(5) Aid and, if necessary, subsidies for worthwhile books and booklets on the history and government of Pennsylvania. A committee of historians will be appointed to review manuscripts that otherwise might not get into print. Later on, funds may also be included to buy other worthwhile literature on the subject for free distribution to schools and libraries.

(6) Preparation, purchase and distribution of filmstrips and slides, with sound, to help in teaching Pennsylvania History and related subjects. Such audio-visual materials could also be useful for civic organizations, educational radio and television, and similar uses. A pilot program is budgeted this year.

For additional information about these projects write to:

Dr. S. K. Stevens, Secretary
Historical Foundation of Pennsylvania
William Penn Memorial Museum
Harrisburg, Pennsylvania

CURRENT EVENTS — WPSX-TV (3)

WPSX-TV, Channel 3, is broadcasting two 15-minute lessons a week on Current Events for grades 3-6. These telecasts, which are a form of large group instruction, introduce students to, and encourage them to take an interest in problem areas concerning community, state, national, and world affairs in their relation to social, economic, and political problems. Maps, graphs, charts, artifacts, posters, and photographs will be often used to illustrate world issues. The lessons will be broadcast on Tuesday and Thursday mornings at 10:45 and each repeated on the following days at the same time.

PROGRAMMED ARITHMETIC

Scholastic Book Services have designed five motivational programmed mathematics practice books which may be very effective as a supplement to your present textbooks and courses of study. They include the basic facts usually taught in grades one through four and are very useful for remedial work through higher grades.

The purpose of Scholastic's *Self-Teaching Arithmetic Practice Books* is not to present the detailed developmental approaches of the "new mathematics" or even of the "old mathematics." The five books that make up the series are an ingenious, self-motivating and self-teaching type of instructional material intended to develop computational skill in the fundamental arithmetic facts and related processes. Such skill is essential whether a school is using the traditional textbooks or materials prepared for the "new mathematics" program.

These books are suitable for supplemental use in the "new mathematics" courses, but have avoided reliance or emphasis upon any of the many different, and sometimes contradictory approaches to mathematics found in the different series of texts. However, the modern concepts of sets and regrouping are thoroughly presented, and the commutative, associative, and distributive principles have been carefully applied.

The "new mathematics" has given added intellectual integrity to arithmetic, which is certainly commendable. We are asking children to learn inductively the basic principles or generalizations underlying arithmetic processes. We are finding out that they can do so. But if arithmetic is really to become a tool for quantitative thinking, children need more than a grasp of principles and generalizations. They need to put the principles and generalizations to work with a degree of efficiency that can only come with substantial practice and drill.

Drill as a teaching method has for years been under criticism because of the abuses associated with it. Hours of meaningless drill cannot be tolerated in today's classroom. However, in reaction to the abuses of drill, too many educators overlooked its rightful uses. Any experienced elementary school teacher will confirm the fact that all young children need regular periods of practice in such skills as arithmetic, spelling, and handwriting if these skills are to function efficiently in the child's life. Brighter children usually need less time for practice than do slower learners, but they all need some. With their ingenious provision for dealing with individual differences, the *Self-Teaching Arithmetic Books* fill this need for a systematically developed plan for acquiring proficiency in the basic arithmetic facts and related processes.

Scholastic's material provides the three-point feature of self-teach, self-test, self-check. Such features provide a built-in motivation that allows the child to take responsibility for his own learning. A child can move ahead at his own rate of speed — he can back up and go over a practice lesson again and again until he is sure of the basic facts. Likewise he can practice several lessons in succession during one sitting, always checking the accuracy of his own work. The *Self-Teaching Arithmetic Books* do what only the latest and best programed teaching materials can do: make the child aware of his own rate of progress. They relieve the teacher of some of the necessary but mechanical and very burdensome tasks in teaching basic skills.

It is not necessary to obtain as many copies of the books as there are children in a class. Since the entire series is organized for individual practice, only a reasonable number of books should be placed in a classroom.

These books may be used over and over again, since no writing is done in the books. The writing is done on a "magic" slate (which is supplied with the book) or on a piece of scratch paper. Moreover, damaged leaves may be replaced at nominal cost.

For further information write to:

Scholastic Books and Magazines
50 West 44th Street
New York 36, New York

SONY PRODUCES VIDEOCORDER

The August issue of *Educational Screen* and *AV Guide* includes an article about an exciting new development in TV teaching. The Videocorder is introduced as a low cost video tape recorder that might well be the answer to individualized or small group instruction via the television medium.

Videocorder is a package deal, including both camera and audio-visual reproduction on a 9 inch screen. This enables the operator to immediately play back what is being picked up; or, the units can record programs off a regular television screen and replay them at a later date.

If Videocorder lives up to expectations, TV production within the individual school will begin to assume a degree of practicability not generally realized today. It can also refute the criticism that Educational TV can be used effectively only with larger groups and in lock-step fashion.

Sony plans to list the portable version of Videocorder at $995.00, and the camera kit at $350.00. For further information write to:

Sony Corporation of America
580 Fifth Avenue
New York, New York 10036

Area Six Schools

(Events, Projects, Views)

MILL HALL ELEMENTARY SCHOOL FINDS ITA HELPFUL

In September 1964, a group of first graders in the Mill Hall Elementary School began an experience with the Initial Teaching Alphabet that eventually proved for most of them to be a highly profitable undertaking.

Under the supervision of Mr. Robert E. Hinkelman, Principal of Bald Eagle Nittany Area Elementary schools, Mrs. Peggy Shoemaker introduced the ITA to 36 heterogeneously grouped first graders. Mrs. Shoemaker, who had received ITA training at a workshop, provided the class with a full set of materials necessary to the one-year reading program.

Diagnostic tests were used at the beginning of the experiment, and progress during the year was carefully checked to determine the effects of the program. At the end of the year, a traditional reading test was administered to the group. These results suggested strongly that the ITA program had succeeded in helping most children exceed their projected level of achievement based on the traditional basal reader program. Average gains beyond expectation were approximately 6 months for faster learning pupils, about 2 months for average pupils, and nearly 3 months for slower learning pupils.

With this group of youngsters, typical of the first grade population in their area, there were, at the end of the year, fewer non-readers and fewer non-promotions. Mr. Hinkelman recognized, however, that the ITA offers no panacea; ITA does not eliminate all reading problems.

Other advantages of the program seem to be that children start reading earlier and with greater independence, and creative writing and study skills develop earlier in young children. The transition to a traditional reading program seems not to present a problem, and is, in fact, accomplished as part of the ITA program itself. This September (1965), last year's ITA group is in second grade and their present teacher is convinced they are doing much better than they would have done under the traditional program.

As a result of the success of this program during its first year, another first grade teacher in the same school, Mrs. Julia Pursley, is now using the ITA approach to teaching reading. The Principal fully expects the program to spread to other schools in the future. Thus far there has been general acceptance of ITA by parents, teachers, and most importantly, by children.

Mr. Hinkelman attributes the success of this program largely to the following factors:

1. The teachers who used ITA were specially trained and were enthusiastic about the program.
2. All materials essential to the success of the program were made available to the teacher.
3. The ITA reduces sight-sound confusion by assigning only *one* sound to each of its 44 characters.
4. The confusion over lower case - capital letter form is eliminated because ITA has no capital letters that differ in form from their lower case letters.

Interested teachers and administrators are invited to visit the two ITA classrooms now in operation. For further information about the Mill Hall project write to:

Mr. Robert E. Hinkelman, Principal
Bald Eagle Nittany Area Jointure
Mill Hall, Pennsylvania

General information and materials relative to Initial Teaching Alphabet can be obtained from:

Initial Teaching Alphabet, Publications, Inc.
20 East 46th Street
New York, New York 10017

Aids and Ideas

PETROLEUM INDUSTRY MAKES MATERIALS AVAILABLE

Teachers and guidance counselors should take the opportunity to examine for school use the diverse and generally excellent instructional materials available from the Associated Petroleum Industries of Pennsylvania.

Free teaching aids can be obtained for almost any grade level and for a variety of subject matter areas.

As examples of the materials included, there is a six-chart unit for economics and social studies classes (complete with student study manuals and a teacher guide); a science fair guide; classroom booklets for chemistry, physics and science classes; a picture-discussion portfolio on conservation; motion pictures; a booklet on careers in the oil industry, and a great variety of other materials.

Interested teachers should request from the industry its description of free school materials and services, including the film catalog which lists available movies about oil. Write to:

Associated Petroleum Industries of Pa.
P. O. Box 161
Harrisburg, Penna. 17108

TEAM-TEACHING FILM

Educators in this area have expressed considerable interest in the organization and function of a team-teaching system. Now, Crown Films has produced a 26-minute film showing how an actual school system has established such a program.

The film shows how staff utilization and scheduling can make possible a team teaching arrangement. The E. Ferris High School in Spokane, Washington is the setting for this production.

The film would seem appropriate for acquisition by instructional material centers and other A-V centers in the interest of sharing its ideas among numerous schools.

A Team Teaching High School: The Ferris Story may be previewed and is available from:

Crown Films
P. O. Box 890
Spokane, Washington

FILMS HELP MAKE ECONOMICS REAL

A set of free filmstrips from Esso are available to teachers who wish to teach basic principles of economics to their pupils.

Mr. George MacKenzie, Head, Social Studies Department, Lock Haven Senior High, uses and highly recommends these films for use by secondary teachers. The films will appeal to pupil groups with a wide range of intellectual and interest levels.

Four filmstrips which are particularly well done are:

The Work Prices Do
Why is a Corporation
Savings — What They Are and Do
Profit — Reward for Risk

To secure these aids — FREE, write to:

Humble Oil and Refining Company
15 West 51st Street
New York 19, New York

INSERVICE TRAINING FOR OVERHEAD PROJECTION

The Tecnifax Corporation sponsors an inservice training program on using overhead projection equipment and making transparencies. It is designed to help the Superintendent, Dean, Principal, Business Manager, Department Head, Audio-Visual Director, or their representatives to evaluate the overhead projector's potential for improved instruction in the classroom. There is No Charge for participation in this one day program (9:00 A.M. to 3:30 P.M.) which convenes the first Friday of each month. Reservations may be made by writing to:

Bruce T. Carl
Tecnifax Corporation
4580 McKnight Road
Pittsburgh, Penna.
Telephone: 931-5422

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF PUBLIC INSTRUCTION

LOCK HAVEN STATE COLLEGE
Lock Haven, Pennsylvania 17745

U. S. POSTAGE
PAID
Permit No. 92
Lock Haven, Pa.

The emblem appearing on the cover of the CIRCULATOR is through the courtesy of AMERICAN SCHOOL AND UNIVERSITY Purchasing Guide, 1962-1963, copyright Buttenheim Publishing Corporation.

VOLUME II, NO. 3

DECEMBER, 1965

CULATOR

AREA 6 CURRICULUM CENTER / LOCK HAVEN STATE COLLEGE / LOCK HAVEN, PENNSYLVANIA

AREA SIX COORDINATOR: C. H. LARSON

EDITOR: E. M. NUSS, D.Ed.

From the Editor

TO OUR READERS:

We want to encourage you to inform us of interesting activities and developments in curriculum which may be taking place in your school or classroom. We will be delighted to receive articles for publication in the CIRCULATOR, or, when possible, we will come on invitation to your school and get information about your project directly from you.

We invite teachers and administrators to contact us if they wish to discuss possible workshops or consultant assistance with regard to ideas and topics included in the CIRCULATOR. Funds are available to subsidize expenses incurred in connection with follow-up and developmental activities relating to instructional media. We are prepared to support consultant services in the schools and to make available helpful activities on the Lock Haven State College campus.

For example, articles in this and last month's CIRCULATOR include suggestions for using the 8mm single concept film, the overhead projector, and folk music as a basis for teaching poetry. If Area Six educators are interested in demonstrations or workshops, or simply in a discussion of these or other ideas, they should write or call the editor of the CIRCULATOR.

UTILIZING THE SCHOOL'S CAPITAL

By Mr. Ernest J. Rookey

This month's editorial is written by Mr. Ernest J. Rookey, Curriculum Development Specialist, Penna. Dept. of Public Instruction. Mr. Rookey is on the staff of the Bureau of Curriculum. He has been instrumental in the development of the Area Curriculum Program of which Area Six is a part.

Capital . . . "An aggregation of goods used to promote the production of other goods, instead of being valuable solely for immediate enjoyment." — Webster's New Collegiate Dictionary.

A business administrator who does not utilize his working capital to the fullest extent is constantly searching for new ways to increase his productivity. We in education must follow this example in finding better ways to utilize the school's capital. The single, most important capital of the school today is the educational background of the teachers.

During the early period of American public education a teacher was accepted as a practitioner following completion of one year beyond the grade he was expected to teach. Not long ago a teacher was qualified if he obtained one or two years training at a normal school. Presently a teacher must earn a Baccalaureate Degree before entering the profession and, in many states, must continue his schooling an additional year before becoming fully certified. Also, teachers in increasing numbers tend to seek the Master's Degree because of salary structures and job assignments. Thus the school today has a greater education "capital" than at any time in its history.

The question remains, are we fully utilizing this capital?

Teachers today are well educated and, since schools place a great emphasis on the value of education for developing maturity, decision-making, problem-solving, and so on, it follows that the teacher is in a position to utilize his education to advantage in assisting with the significant decisions of the operation of the school. When the teacher was a poorly trained craftsman, it was necessary to direct him in his activities and to make educational decisions without consultation or advisement from the teacher involved. At that time the teacher may not have been sufficiently well educated to analyze and contribute to these decisions. However, this is no longer true. Today's teacher is well educated and capable of accepting the freedom and responsibility demanded by the challenges of decision making in today's schools.

Any suspicion about competence which silently prevents the teacher from assuming a valid position in decision making on curriculum, course assignments, materials purchases, equipment purchases, textbooks, and other performance-influencing areas of education is inconsistent with the quality of teacher preparation. It is apparent that an incongruity exists when the teacher is allowed vast latitude in the classroom methodology while the value of his judgment is discounted in decisions which affect the school's educational policies. It becomes obvious that the people responsible for the day-to-day implementation of the school's educational program must assist in total program development.

"Democratic Administration" has been the subject of many well-written texts and treatises. It is practiced now in many schools. This editorial is not a new design for implementing this theory nor is it an attempt to re-define the term. The author merely wishes to advocate an attitude in educational administration which is based upon the changing nature of teacher preparation.

Administrators with five to seven years of college background working with teachers who have completed four to five years of professional training have

given today's schools a great capital which should be used. It would seem that these professionals should have different relationships from those of the diversely-trained personnel of a previous era.

The following are some suggested guidelines to assist in the development of new relationships and better utilization of educational capital. School administrators should:

1. Encourage the involvement of faculty in all areas of school operation.
2. Provide avenues for direct communication with the faculty.
3. Stimulate critical analysis of policy problems by faculty members.
4. Provide for open discusion of policy matters by the faculty.
5. Seek faculty approval on educational policy matters.
6. Accept significant decision-making as a role of the professional staff.

In connection with the above suggestions, the faculty should:

1. Recognize the nature and scope of the administrator's job.
2. Volunteer for involvement in school problems.
3. Be willing to spend time and effort in analyzing the school's problems.
4. Be prepared to discuss freely and factually all policy matters.
5. Grant unqualified support of education policies which have gained valid faculty approval.
6. Accept a professional role in educational decision-making.

Society is becoming increasingly more complex and, as time passes, it will become ever more difficult for the individual to cope with daily pressures. This is also true of modern institutions; they must be prepared to utilize their resources. We are fortunate that in educational institutions we have a constantly increasing capital — the education of the faculty.

Instructional Media
(New Ideas, Methods, Research)

A SUGGESTION FOR A POETRY UNIT

By Mr. Robert Bravard

Mr. Bravard is an Assistant Librarian at Lock Haven State College. He is a practicing poet and devotee of the arts. He is probably best known throughout this area as the drama critic for the Lock Haven Express. Teachers or administrators interested in learning more about Mr. Bravard's novel approach to teaching poetry should write the editor of the Circulator.

It would be too much to state that America as a Nation rejects poetry, but it is certainly safe to say that Americans ignore poetry. Except for an Eddie Guest or, perhaps, Edgar Allen Poe, the average American would be hard pressed to name any poet, past or contemporary.

There are many reasons for this. The pioneer background, the national preference for a pragmatic culture, and the vast multitude of passive entertainments available would be among the most important.

Consequently few areas in the teaching of literature can offer more opportunity for frustration than poetry. The American lack of interest in poetry is reflected and magnified in the lack of interest of American teenagers. Their reaction to poetry is generally either a passive boredom or an uninterested rejection. Those students who respond often do so out of private motives that many times have little to do with the intrinsic values of poetry.

It is readily apparent that the traditional methods of teaching can do little to crack this cultural barrier. Such methods in the past have served only to create a generation that uses "poet" as a term of disapproval and "poetry" as a synonym for exaggeration. For this generation, none of the life-enhancing benefits of verse have ever become apparent. Poetry has rmained an alien art, remote from them in meaning and experience.

Therefore it would seem logical that a different method should be tried to make poetry more contemporary, more a functioning supplement to living — a means that could surmount the ingrained suspicion of versification. Perhaps the tools for such a method are not as difficult to locate as it might seem.

The current picture of a teenager is one of an affluent youth with a transistor radio in public and a stack of 45 rpm. records at home. His world is filled with record hops, top pops, and the big beat. His heroes are groups of shaggy-haired musicians with such odd names as the Beatles, the Rolling Stones, or the Back Porch Majority.

To most adults the net product of such groups is noise — a highly rhythmic but nevertheless distracting noise. Yet it is quite possible that on this level and with these tools, a means of making poetry meaningful on a non-esoteric level is available.

The teenager with his transistor tuned to the station playing the top forty tunes of the week is submerged in poetry. Song by song, he is continually hearing rhymed, rhythmic verses that often, once the words are deciphered, speak with a direct meaning that is quite real to the youthful listener. They are experiencing a type of crude but nonetheless honest poetry, in a form which holds no terror for them and commands their full attention.

It is a rare adult who takes the time and trouble to listen to the words of current popular songs. Perhaps it is easier to believe that these lyrics are nonsense, mere tonal vocalizations. On occasion the words may seem overwhelmed by the background music or overly accented for the purposes of rhythm, but in many instances these lyrics are highly involved, and carefully structured.

Anyone listening with an open ear to pop music will soon hear song after song reflecting in an unsophisticated form the same impulses that have inspired the master writers. Current teenage music can concern itself with more than endless repetitions of "I want to hold your hand" or "Yeah, yeah, yeah," although there is a large amount of that.

Rather, there are songs about class discrimination, the effects of poverty, social protest, the culture of automobiles, and folk superstitions. There are songs of surprising lyric loveliness, always well within the musical setting and the cultural limitations of the audience. There are honest expressions of the emotional problems and the social mores of contemporary youth. Surely this material can furnish ample opportunity for a different starting point of a unit on poetry.

The words of most popular songs are available in printed form in such publications as SONG HITS and SONGS AND STARS, available in the neighborhood drugstores for around 35¢. It is probably advisable to play the song at least once before starting any discussion about the poetic values of the lyrics. A recording can probably be borrowed from a student collector.

A song such as Roger Miller's recording of "King of the Road" would serve as a fine beginning. Miller's song, a bittersweet, surprisingly evocative account of a tramp's existence, starts with a quick word sketch of the seedy edge of any large city. From this opening it enters into a description of the hardships of tramp living, always tempered with a light spirit and an honest acceptance of these hardships.

The song can serve as a springboard for discussion in many directions. There can be an analysis of how the song's effects are achieved; how the use of a single concrete detail can create a fully rounded picture; and how the song reflects the contemporary social scene. In so studying this song, the students are working with material that they have accepted in popular form; there is nothing esoteric about it for them.

There are many other sings that could serve equally well: "Downtown," "We Gotta Get Out of This Place," "Eve of Destruction," and "Home of the Brave." Not all of these have reasonably literate lyrics or have been highly successful. Several are quite controversial, e.g., "Eve of Destruction" and "Home of the Brave," and could inspire valuable class discussion.

On a slightly higher level there are those songs composed in the folk idiom by young composers. Of these Bob Dylan is probably the best known and the most successful. Dylan's work includes such materials as "A Hard Rain's A-Gonna Fall," an absolutely surrealistic group of images depicting the horror of atomic war and "Like a Rolling Stone," a long, quite biting account of a girl's descent from virtue told in highly literate terms. Again these songs have been highly successful and are familiar to the average teenager. The material is poetic in form and expresses itself in a "literary" manner, more so than the straight popular material.

Other songs on this level include such items as "Little Boxes," "The Universal Soldier," "Where Have All the Flowers Gone," "What Have They Done to the Rain," "Blowing in the Wind," "If I Had a Hammer," and the near-classic "We Shall Overcome."

Moving to a higher level and one considered to be a basic part of our literary heritage, we find the authentic folk song. Many of these, in souped-up arrangements, have achieved great popular success. For example a recent hit of overwhelming popularity was the British folk song, "I'm Henry the Eighth"; and who can forget that ubiquitous item of a few years back, "The Yellow Rose of Texas." Few teenagers are able to resist the hauntingly lovely voice of Joan Baez singing "Barbara Allen" or her other renditions of the child ballads. There are many recordings by highly popular groups and individuals of folk songs.

Hopefully, it would be at this point — a well-known and popular performer singing a popular song but one that is actually printed in the textbook as a poem — that the perception of poetry as a living form would emerge. From this point it can be a relatively simple matter to bridge the gap between pop song lyrics and true poetry.

Currently, there is available a long playing Capital record entitled "New Dimensions in Folk Songs" as performed by the Three D's. The entire record consists of standard poems set to music in folk arrange-

ments. On occasion the words have been revised or verses omitted, but by and large the poems are intact. Included are such standard poems as "The Highwayman," "Richard Cory," "Annabel Lee," "Gunga Din," and "The Charge of the Light Brigade."

With this recording, it is possible to move directly into the mainstream of poetry while yet retaining the elements of popular music. From this point, it would seem reasonable that such poets as Housman, Blake, Tennyson, Byron, and Kipling could readily be assimilated without the aid of music.

Once familiar with such writers and once poetry has lost its strangeness, it should be possible that more and more complex poetic forms can be appreciated. It is hardly anticipated that the students will start reading Hopkins, Eliot, or Pound for fun by the end of the unit, but the shorter works of Milton, Wordsworth, Frost, and Browning will be well within the student's grasp.

Such a suggested method of poetics does not pretend to result in a classroom of polished critics and poets laureate. But it does seem reasonable to believe that a well structured unit would succeed in removing the sense of strangeness from poetry and in demonstrating how much a part of everyday living poetry can be. It can give a student a sense of words and their power, even when used in the most unlikely situation. It can give the receptive student a vista that need never close.

THE OVERHEAD PROJECTOR

By Mr. E. Schrot

Head, Audio Visual Department, Lock Haven State College

How often have you wanted to show certain material to your class to help clarify a lesson and found it impossible? It was simply not practical to hold it up, pass it around, or have it duplicated.

Until recently, there was no really satisfactory answer to this common teaching problem. Only in the last few years has one of the most effective methods ever developed for visual communication become widely available: the **overhead projector.**

The modern overhead that I feel teachers will select and use will be the desktop projector. Since this will lie flat on the teacher's desk with only 1½ inches of thickness, the teacher will sit at his desk and project large, bright pictures on the screen back of him with the flick of a switch. This overhead projector will be silent because it has no motor or fan. It weighs only about ten pounds.

Although an overhead was used during World War II in the teaching of navy trainees, it was then called a view-graph; it had only a 6-inch stage and was little used in the public schools. Now the overhead, with its large square stage good lens and bright light, is considered one of the newest types of projectors to join the audio-visual family. This machine projects an image from a slide or transparency back over the operator's shoulder to a screen. The instructor faces the class. The overhead is, therefore, a "short throw" projection. Light is furnished by a 500 to 1000 watt lamp and is reflected upward to a projection stage and onto an objective lens, which is centrally supported above the stage. The light strikes a mirror and is reflected to a screen back of the operator. The machine may rest on the teacher's desk or it may be on a projection stand or table; thus the teacher may sit or stand before the class.

A piece of glass varying from a 6" diameter to a square of 10" x 10", becomes the projection stage. Drawings may be made directly on the glass with a ceramic pencil or on cellophane stretched over the stage. The cellophane over the stage can be shifted and used for the entire length of the roll. An entire teaching unit may be placed on the cellophane and later wiped off with a clean cloth and the cellophane may be used over and over again.

The term "whiteboard" has been applied to this type of projection because it may serve as a chalkboard. It has the very great advantage of letting the teacher always face the class. The overhead projector has other advantages that slide and opaque projectors do not have.

THE MACHINE IS IN FRONT OF THE CLASS.

THE BRILLIANTLY ILLUMINATED IMAGE IS VISIBLE IN AN UNDARKENED ROOM.

THE TEACHER CAN SEE THE FACE OF EVERY STUDENT.

TRANSPARENCIES UP TO 10" x 10" MAY BE USED.

THE TEACHER CAN WRITE OR DRAW EXTEMPORANEOUSLY ON A 10" x 10" SURFACE.

NO EXTRA PROJECTIONIST IS REQUIRED.

MATERIALS ARE MORE CLEARLY VISIBLE TO LARGE CLASSES THAN IF THE MATERIALS WERE ON A CHALKBOARD.

There are three principal methods of preparing materials for use in the overhead projector: (a) handmaking, (b) dry printing, and (c) photographing.

The professional skill of the teacher, the availability of equipment, the time at one's disposal, the purpose for which the material will be used, and the permanence desired will determine which method is best to use.

Ingenuity may be shown by the teacher in projecting graphs, charts, diagrams, silhouettes, plastic models, and mock-ups. The chemical reactions of fluids and solutions can also be shown on the stage of the projector. Overlays to show assemblies, growth, development, and integral parts of a whole are easily projected. Exercises or problems can be effectively handled on transparencies by masking parts and then uncovering them as the recitation progresses. Overlays can be useful in teaching maps, routes, business forms, biological structures, engineering projects, geometry, physics, electricity, history, and many other subjects or units. Since many of these transparencies with appropriate overlays may be bought commercially, teacher time could be saved by investigating and buying appropriate classroom materials.

In the Hosack report, completed and approved in 1964 by the Pennsylvania State Advisory Committee on Audio Visual Instruction, it was recommended that in the elementary school there should be a minimum of one overhead projector for every six classrooms. In the secondary schools, one for every four classrooms was recommended. I would rather go along with what has been recommended for the New York City schools by the City Board — that is, an overhead projector for each classroom.

If the teacher has this piece of equipment at his disposal in his room when it is needed, he will discover it to be one of his most valued teaching tools.

GRAFLEX INTRODUCES MAGNETIC SOUND 16MM PROJECTORS

Magnetic sound has been added to optical sound and silent film options in a new series of 16mm motion picture projectors being introduced by Graflex, Inc., a subsidiary of General Precision Equipment Corporation.

There are two models in the new Graflex 16 magnetic sound series. The first provides magnetic record and playback; the second provides magnetic playback. Both come equipped with optical sound and silent film capabilities as well. Magnetic record and playback makes it possible to produce your own sound track for films, mix and edit sound for accompanying narrative, even change existing commentary on the magnetic sound track. Addition of a magnetic strip allows the mixing of background music or sound effects. The entire range of film production is broadened with magnetic record and playback Graflex 16 Projectors.

When recording magnetic sound, the presentation can be recorded, erased and re-recorded. Finger-tip controls are conveniently placed on the projector allowing selection of function at will. Record models include level meter (indicating actual recording level) and accident-proof erase controls.

Three-way film projection — magnetic, optical, silent — is offered in both playback and record and playback models. Magnetic sound dramatically extends the quality of film presentations; with magnetic sound, system frequency response up to 10,000 c.p.s. is achieved. Built-in projector speakers are available or optional case-cover speakers with a 50-foot cable serve as a moveable sound source.

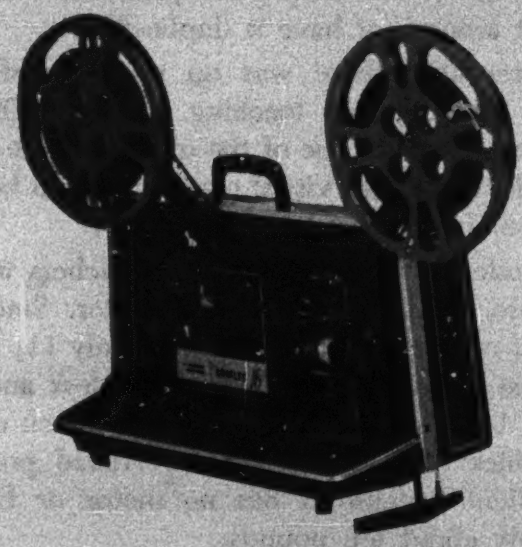
Normal lamp life cited for the Graflex 16 is 100 hours. At full intensity, operating service life reaches 25 hours with the cool but brilliant DLR lamp. Life expectancy is about ten times that normally obtained from conventional lamps.

Other features noted for the new magnetic sound Graflex projectors include:

1. Automatic soundhead loading
2. Pushbutton color-coded controls
3. Adjustable film gate provides correct pressure on any type film regardless of condition.
4. Single-lever controls reverse operation without stopping projector.

Optical sound models of the Graflex 16 have been field proven over the past several years. The new series incorporates these same advantages with the added versatility of magnetic sound.

For more information write to the Advertising Manager, Graflex, Inc., 3750 Monroe Avenue, Rochester, New York 14603.



Magnetic 16mm Sound Projector

USING THE OVERHEAD PROJECTOR

The overhead projector complements the instructor but does not replace him. This is the proper way instructional media should be used. At all times the teacher controls his mechanical assistant and can easily integrate his visual materials and verbal comment. He selects his own pace, extemporizing as he wishes, commenting before, during, and after the use of each projectual.

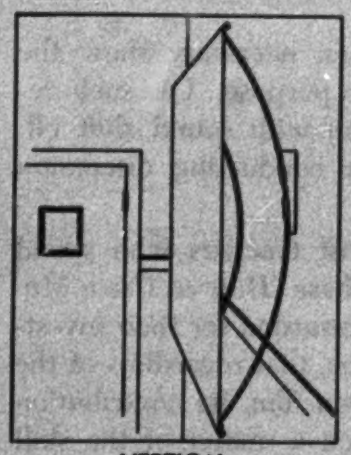
No special skills are required to operate the projector. Any member of the instructional group can use the projector to work out a problem or offer a suggestion.

The overhead projector is an efficient and flexible instructional tool for the classroom. The optical system permits placement of the projector close to the screen, thereby making it possible to project transparencies from the front of the room. Since the image is projected over the shoulder of the teacher, he faces his pupils at all times. Therefore, with the students in full view, the teacher can observe reactions and adjust his program to meet the response of the pupils.

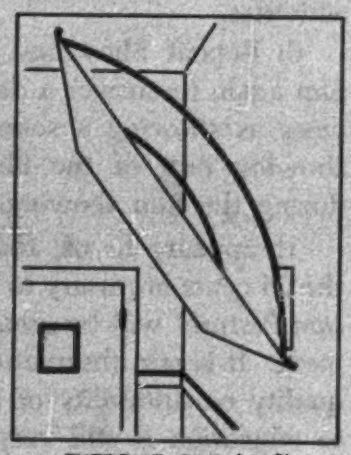
By using a projector with high light-output, excellent screen visibility may be provided without darkening the room or impairing ventilation. It will not be necessary to keep the image on the screen, or to turn the lights on and off in the room, as with projection in a darkened room. This feature reduces inattention and drowsiness.

The screen should be supported by a "wide arc" frame permitting it to be readily tilted to correct positioning for maximum efficient viewing by each student.

Such a screen may be moved from a vertical position to an extreme tilt of 40° as shown by the diagrams below; therefore distortion of the image is eliminated by keeping the screen at right angles to the light rays that are emitted from the overhead projector.



VERTICAL



EXTREME TILT (40°)

The horizontal stage of the projector provides for presentation flexibility. With a wax pencil the teacher can write or draw extemporaneously, for simultaneous projection, on projectuals or sheets of transparent plastic. This may be erased with a damp cloth so that the transparencies may be used again. He can project transparent objects, animated devices, or fluids. He can use a pointer to call attention to details of projectuals. He can use transparencies composed of several layers of plastic (overlays), unmasking them for progressive disclosure, or building them up to form composite images.

Transparencies can readily be made. Rudimentary art skills can produce dramatic, professional-looking projectuals, and the equipment for their production is simple and relatively inexpensive. Diazo-color films, in a wide range of colors, make it possible to prepare multi-color projectuals at a fraction of the cost involved in colored photographic transparencies.

Many transparencies on most subjects have been commercially prepared and may be purchased from numerous companies for teacher and student use.

HOW TO USE A MOTION PICTURE

NOTE: The following is a review of a pamphlet published by the National Council for the Social Studies, written by William H. Hartley. It is No. 1 in the "How To Do It" series of publications available to teachers from the Council.

The author suggests that the first question a teacher should ask himself before using a motion picture in his classroom is, "What *unique* contribution will this film make toward the richer education of my students?"

This is undoubtedly a very important first-step toward the use of a film, or for that matter, any instructional aid. Films should not be used *merely* because they are available, or because it is a popular thing to do. Films should never be used when another aid can do the job better, e.g., maps and globes probably do a better job of teaching place concepts than do films.

Mr. Hartley points up what are generally recognized as the principal advantages of the motion picture:

"First, and most obvious, it moves. If motion is essential to the concept to be taught, then a good film can help the teacher to get ideas across. With the aid of the film the steps in a process may be readily followed, or cause and effect may be shown.

"Second, through the use of animation, slow motion, time-lapse photography, and microphotography the film may depict scenes otherwise unobservable.

"Third, the motion picture, through the use of historical reenactments can give the students a sense of continuity, the setting, and the mood of the past which is difficult to catch in any other way.

"Fourth, the sound motion picture, through dramatic incidents, stirring music, and wisely edited scenes can build up attitudes toward outstanding problems.

"Fifth, the film lends variety and interest to teaching. Properly used it can make reading, map work, construction work and other classroom activities more meaningful and educationally significant."

Following the author's logic, the first step in film use is for the teacher to select from his teaching unit those ideas which can best be presented through a film. One cannot argue that this approach is unsound; one must however, be conscious of the need for very careful planning, i.e., the teacher must analyze his over-all plan and decide upon the areas in which films seem to promise the most in enlightenment.

The next task is to find the films required.

Films are generally classified according to the purposes they are designed to serve. Mr. Hartley describes the following cataloguing of films.

CLASSROOM FILMS: Designed expressly for classroom use.

GOVERNMENT FILMS: Many of these are designed for classrooms, but not all.

THEATRICAL FILMS: Full length and special "shorts" are available to schools.

COMMERCIAL FILMS: Usually have advertising as primary purpose.

MISCELLANEOUS FILMS: Produced by the U. S. Government and by private groups to show a particular problem or situation. Often these have an editorial slant.

Producers of films in these categories are listed in the pamphlet. The well known *Educator's Guide to Free Films* is, of course, the best general guide to free motion picture films.

The author holds that one of the most important steps in effective film use is the teacher's preview. He states, "The preview will guide the teacher as to the most effective way in which to present the film, or it may convince him that the best thing he can do with the film is to return it to the distributor at once without wasting the time of the class by showing it to them."

Having selected and previewed the film, the teacher should next prepare the class for the film. Class members should look for definite information in the film. How to so orient the class is a difficult question since they typically know almost nothing about the content of the film.

Mr. Hartley makes one suggestion which has special merit. He recommends that a committee of students preview the film and then introduce the film to their classmates. Psychologically, this seems like an excellent approach. Practically speaking, it no doubt will present many schools, especially secondary schools, with problems in scheduling students for this activity.

The most important part of the motion picture experience, according to the pamphlet, is in the follow-up after the film has been shown. Here is the time to "clinch the learning, . . . to determine if questions have been answered, . . . to learn what questions have arisen." Anyone who has sat through a film of reasonable quality and importance, and that ends just as the bell rings, will appreciate the value of this advice. In terms of effective learning, the follow-up is absolutely essential; perhaps a second, or even third showing will enhance the learning process.

Mr. Hartley gives much specific advice to teachers who wish to use the motion picture. His suggestions are, for the most part, those found in any good audio-visual manual. However, it is likely that most teachers would profit from a review of these basics of film showing. His summary of the steps essential in teaching with films is as follows:

1) Plan. Lay out the projected unit of material in detail and then plan the use of films where they seem appropriate.

2) Select. Out of the available films select the one which seems best suited to the purpose at hand.

3) Preview. Run through the film before showing it to the class and plan your introduction, motivation and follow-up.

4) Presentation. Show the film in as smooth and showmanlike manner as possible.

5) Follow-Up. While the film is fresh in the minds of the students, discuss, test and plan further activities.

6) Repeat Showings. When necessary show the film again to answer a definite purpose. Use such devices as showing a sound film with sound shut off, showing part of the film, or conducting discussion during the film showing.

It appears to us, that most teachers who spend the 25 cents necessary to purchase *"How to Use a Motion Picture"* will be greatly rewarded for their investment. It is our observation, too, that regardless of the quality or suitability of a given film, its contribution to education is still very much a matter of the skill of the teacher who uses it.

A VISUAL COMMUNICATION SYSTEM: AN AID TO CREATIVE TEACHING

The 3M Company offers a Visual Communication System based on the use of the overhead projector, but with an innovation designed to make overhead projection easier and more effective.

Using the Thermo-Fax Brand Copying Machine, a teacher can make a 4-second copy from almost anything at hand — class papers, newspaper clipping, drawings, pages from textbooks, magazine illustrations, etc. 3M suggests that the only limitation to the new system is the imagination of the teacher, (and most teachers would add, the time available!).

The 3M Company is obviously interested in selling its products; however, their publication *"New Creativity in Teaching,"* does contain many useful ideas for teachers who wish to add "a new dimension to their teaching."

The ideas listed below illustrate the practical approach 3M uses when discussing overhead projection. For more information about *"New Creativity in Teaching,"* write: 3M Company Visual Products, 2501 Hudson Road, St. Paul, Minnesota 55119.

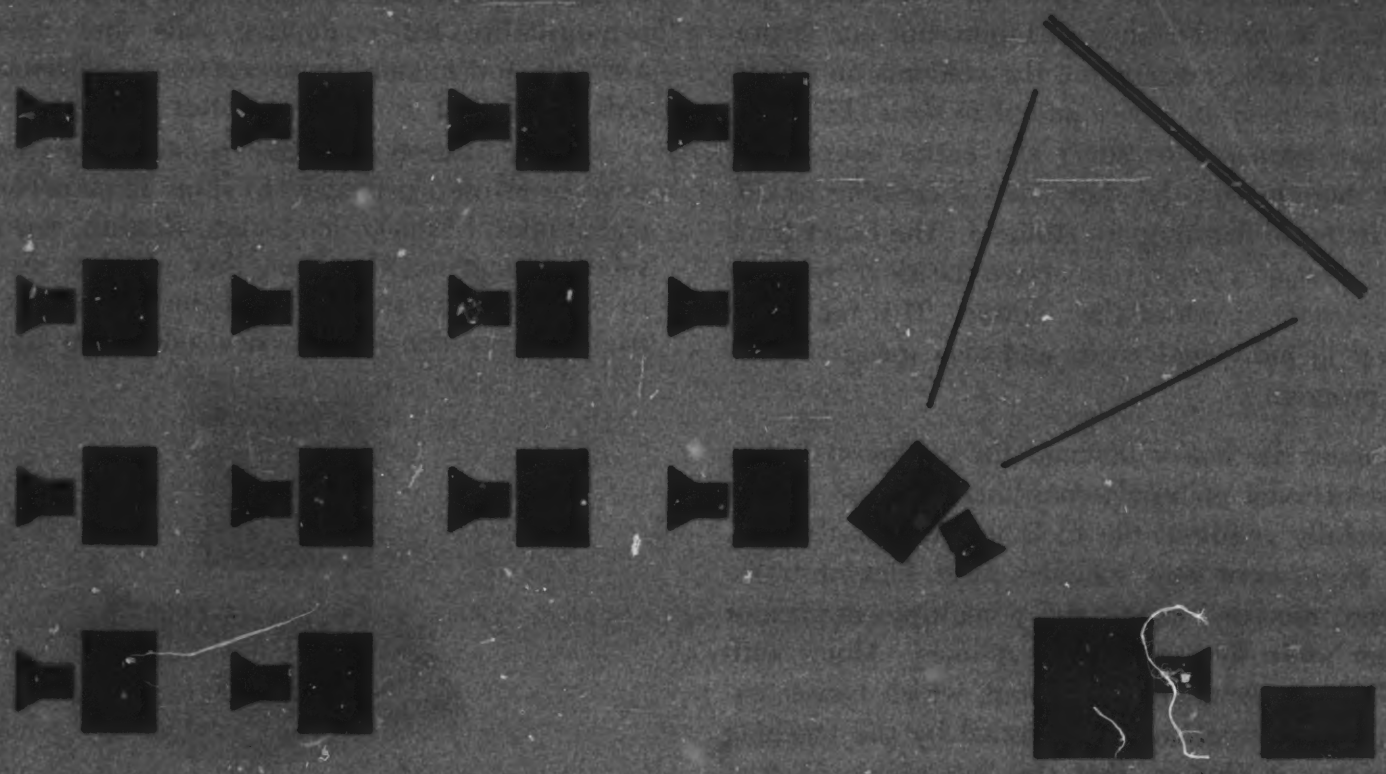
Hints for Effective Visuals

1. Keep visuals simple and uncluttered. Use no more than 10 lines of copy and no more than 6 or 7 words per line.
2. Don't be too wordy. Concentrate on *one* point or *one* comparison.
3. Numbers and words should be large enough to be easily read by the student in the very last row.
4. Use a No. 2 pencil for best copying on the Thermo-Fax infrared Copying Machine. When using a typewriter, use a speech or primer typewriter to get large print which will be easily readable in the rear of the room.
5. Special overhead projection illustrations are available from the 3M Company. Your textbook publishers may also be able to supply special illustrated material as visual originals. Ask them for assistance.

IDEAL ROOM ARRANGEMENT

1. By projecting at an angle, as in the accompanying diagram, it is possible for the teacher to remain before the class and still allow the entire class to view an unobstructed screen.

2. Keep the position of the screen as high from the floor as possible. Then no student's view should be obstructed.



WEST COAST DISTRICT MAKES OPTIMUM USE OF AUDIO VISUALS

The instructional materials department of the San Mateo Union High School District on California's San Francisco Peninsula has increased its use and inventory of audiovisual equipment by 500 to 600 per cent during the last five years. Four hundred pieces of audiovisual equipment are currently utilized in the seven high schools of the district.

Major benefit of this rapidly expanding program has been a dramatic increase in teaching efficiency in many areas. For example, audiovisual presentations have speeded up the teaching of subjects such as industrial arts and shorthand by an estimated three times.

For the industrial arts courses, the instructional materials department prepared some 7000 transparencies for use in overhead projectors to cut the time required to teach mechanical drawing. The transparencies eliminate the need for students to duplicate already acquired drawing fundamentals prior to tackling new lessons. Material learned earlier is drawn for them on the transparency and the students can focus their efforts and attention on the part of the problem not yet mastered.

Shorthand dictation instruction too has been made much more efficient with audiovisual aids. In this case, a stereo soundtrack with earphones for students prsents practice dictation. There are two tracks per tape, each having the same dictation, but one is presented at a faster rate, giving the students an opportunity to proceed at a pace suited to their skill level. Tapes are prepared to cover the entire course, the rate of dictation on the slow track increasing as different stages of learning are attained. The faster track is always set at a given rate above the slow track for faster learners to use at their option. This tailors instruction to individual needs and also speeds up the entire program.

To meet the heavy demand for audiovisual aids, the instructional materials coordinator of the district has carefully acquired the tools needed for the program. Equipment now includes huge files of transparencies, recorded tapes, and a multiple duplicator that can make five recordings at once. Along with these items, a separate large room, which houses every type of instructional aid needed by the teaching staff, makes it obvious that the San Mateo District takes this field seriously.

Instructional films hold center stage in San Mateo's fast growing program, with a 40 per cent increase in the number of movies shown annually by the district within the last five years. Total film rental budget for the 1964-65 school year is $12,635.71. The program includes showings of innumerable titles in 12 academic departments. Some 10,000 students in the district, in grades nine through twelve, will see the films.

The importance of educational movies always has been recognized by the San Mateo District which considers itself a leader in their use. The district's complement of motion picture projectors now includes 22 Graflex 16 Model 815 sound units, which have proved to be extremely popular and durable in the district's program.

As the instructional materials coordinator pointed out, "Rarely is a projector left in the office for as much as an hour. At San Mateo, the classroom motion picture, always one of the most popular means of instruction, is getting stronger all the time. Teachers' requests for more projectors are a sign that they've been accepted."

Teachers are encouraged to use the projectors at San Mateo, because it is the best way for them to maintain control of the learning situation. For increased efficiency in the use of training aids, though, the burden of keeping track of equipment, assigning it, and securing it has been delegated to full-time audiovisual technicians, one of whom is employed in each of the schools in the district. These personnel, under the direction of the instructional materials coordinator, prepare new aids for the program. Overall responsibility for evaluating aids and developing methods for increasing instructional efficiency with aids is assigned to the coordinator.

Of the district's 12 departments, the projectors have been used primarily to show films covering social studies, business, languages, English, science and safety education. However, they also are used often to present topics such as art, home economics, industrial arts, mathematics, physical education and music.

A Modern Transcription Player

FREE MATERIALS FOR ETV VIEWERS

The Division of Broadcasting, Pennsylvania State University, is making available to interested viewers, book lists for two program series which WPSX-TV is currently broadcasting.

Reading lists are offered for, "The Creative Person" and "Aaron Copland: Music in the 20's." Also available is the booklet, "World Theatre," a very interesting resume of a series of TV programs made possible through a grant by Standard Oil Company (New Jersey).

These materials may be obtained — free, by writing to:

William S. Jackson
Division of Broadcasting
201 Wagner Building
University Park, Pa. 16802

FOREIGN LANGUAGES VIA RECORDINGS

Scholastic Magazine offers new, recorded foreign language courses in French and German for elementary children. Each course includes 30 graded lessons on records, 30 unique student scripts and detailed teacher's guides. The lessons are recorded by native speakers, including children; each script includes suggested classroom activities designed to reinforce language learning.

Periodicals and companion records for more advanced students include *Bon Jour, CaVa, Chez Nous,* and *Laisir* (in French); *Das Rad* and *Der Roller* (in German); *El Sol* and *Hey Dia* (in Spanish), and *Komita* (in Russian).

All secondary-level periodicals are published monthly, October to June. These also are produced in Europe and provide the authenticity desired by foreign language teachers.

For further information write to:
Scholastic Books and Magazines
50 West 44th Street
New York 36, New York

Area Six Schools
(Events, Projects, Views)

SECONDARY IN-SERVICE EDUCATION IN THE ALTOONA SCHOOL DISTRICT

By Mr. Raymond N. Hoffman

Coordinator of Secondary Instruction,
Altoona School District

In these days of fast-moving developments in the techniques and materials of instruction, in-service programs for teachers are a necessity if the staff is to remain informed and effective. The staff of Altoona's schools, has inaugurated an in-service program which contributes immeasurably to the general improvement of instruction.

Two aspects of any good in-service program are: (1) continuous opportunities for planning and (2) provision for such planning on school time. These are embodied in Altoona's approach. In the senior and junior high schools, teacher schedules are so arranged to free all teachers in a particular subject matter area on a certain grade level at the same time during the day. This means, for example, that all teachers of English in a given level can meet for planning purposes during the first period — either daily, or according to their needs and total-school plans. Teachers of other subjects are scheduled in a similar manner. The result is a structured program of in-service activity.

There are occasional minor difficulties in certain subject areas, but, in the main, this organization is functioning. The procedure allows for uninterrupted, sequential planning rather than intermittent planning and provides opportunity for continuous evaluation. Working on school time enables the teaching staffs to approach their problems with better incentive, improved morale, and increased efficiency.

Additional phases of an effective in-service planning program are provisions for both large and small instructional and discussion groups and adequate places in which to carry on such work. In Altoona's present organization such a division of staff groups is entirely feasible and is frequently followed. In addition, in each high school building, at least one curriculum planning room is provided in which no activity is carried on except large or small group conferences. These are not all-purpose rooms or lounges but rooms devoted exclusively to teacher planning. They are havens of retreat for those staff members desiring a place for contemplative thinking or quiet, studious discussions of current educational problems.

The Altoona program also involves the liberal use of consultants. To date Dr. Glenn Blough from the University of Maryland and Dr. Robert Kane from Purdue University have provided excellent guidance to certain staff groups. In addition use has already been made of subject matter consultants from several publishing houses. Continuation of such activity is contemplated in the future.

An evaluation of Altoona's plan has shown its advantages, and Altoona anticipates increased benefits from the procedure toward continued improvement of its program of instruction.

OVERHEAD PROJECTOR DEMONSTRATIONS

By Mr. James W. Allen

Science Teacher, Jersey Shore High School, Jersey Shore, Pa. Mr. Allen has successfully used the demonstrations which he describes below.

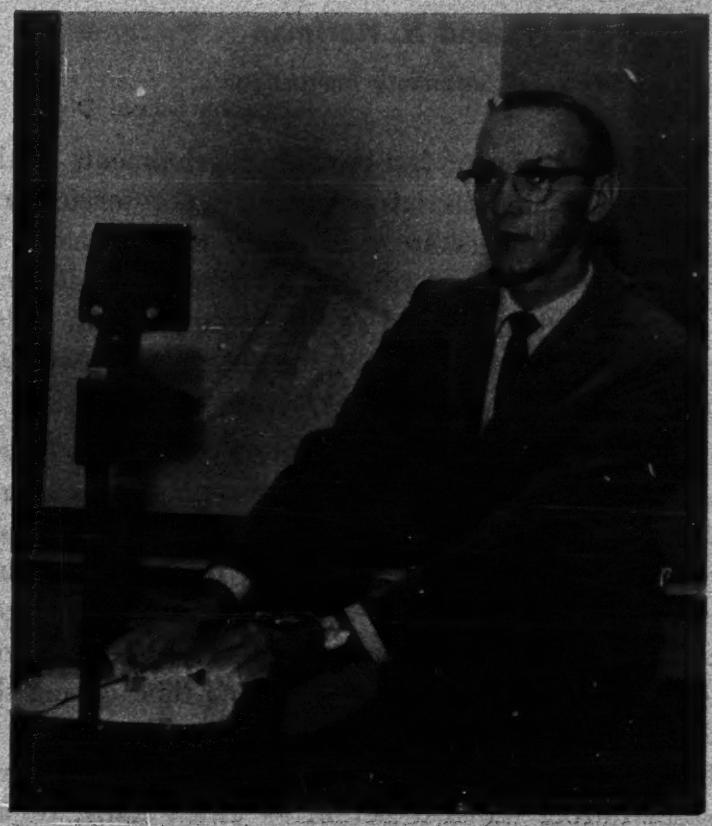
The overhead projector is being used successfully in many subject areas by utilizing transparencies or overlays either teacher-made or purchased. However, overhead projection is certainly not limited to blackboard-related uses. Many three-dimensional objects can be magnified in two dimensions with the overhead projector. Other demonstrations that should be enlarged to be seen by an entire group can be performed with the overhead projector. The following demonstrations are not entirely original, but they are being used successfully in classroom situations.

Two-dimensional magnified images of three-dimensional objects:

1. Filaments of all kinds of electric light bulbs can be shown if the bulb is not of the frosted kind. The reason that the bulb is "burned out" is clearly evident.
2. Examples of levers as machines can be shown by placing scissors, pliers, nutcrackers, cutters, etc. directly on the stage of the projector. Even the threads of a screw can be seen if they are course enough.
3. A conservation of momentum demonstration shows up well by using steel or wooden balls rolling on a glass-stirring-rod track. Modeling clay holds the glass rods together and also serves as a leveling device for the track.
4. A model magnetic field using various magnets and iron filings shows up very well. A glass plate on top of the magnet, the magnet resting directly on the stage, serves as a support on which the iron filings are sprinkled. A few taps on the edge of the glass with a pencil helps to get the filings aligned.
5. A model electric field can also be shown by using the glass plate, aluminum foil electrodes, a static machine to charge the electrodes, and Epsom salt crystals sprinkled on the glass plate to show the electric field. Grass seed in a mixture of mineral oil floated on carbon tetrachloride in a large petri dish will also indicate an electric field.

Crystal growth and chemical activity:

1. A rather simple method for showing crystal growth is to melt some thymol in a petri dish, place the melted thymol on the stage of the projector, and add a small crystal of solid thymol to the melt which has cooled slightly. The crystal growth can be followed as new layers form on the solid crystal. Crystals will form without the addition of a solid piece, too. A cover for the petri dish will keep the odor of thymol to a minimum.
2. The action of sodium or lithium on water makes an interesting demonstration. A large petri dish or a ripple tank will contain the water. A small piece of sodium or lithium, pinhead size, with the oil blotted off and then placed into the water will keep getting smaller as it dances about the water surface. A few drops of detergent on the water will keep the metal from sticking to the side of the dish or tank and will also show the tracks where the metal has traveled. Add a drop of phenolphthalein after the metal begins to react. The red color of the water shows up as an indication of the reaction.



Author Uses Overhead Projector in His Physics Class

Demonstration with light:

1. Examinations under polarized light make good overhead projection demonstrations. Two Polaroid sheets are required. One is placed on the stage and objects are placed on it. The other Polaroid sheet is then put on top of the object to be examined. Crumpled cellophane, cellophane tape stuck on a glass slide in a criss-cross pattern, clear plastic objects, mica, and calcite are excellent objects to be examined. Rotate the top Polaroid sheet and color changes occur. A particular color changes to its complement.

2. Color subtraction can be demonstrated by using colored cellophane. Blue cellophane placed on yellow gives green, red and blue give black, as do red and green, green and blue, or yellow, magenta, and cyan.

3. Wave reflections with a ripple tank work fairly well on an overhead projector. If the waves are generated manually they are more distinct. A drop of water from an eyedropper will give circular wavelets. A piece of rubber tubing in the shape of an arc can act as a circular reflector. A drop of water at the focus of this curved reflector will give rise to plane reflections.

Miscellaneous:

1. Oersted's experiment can be demonstrated with overhead projection. A small cork with a pin stuck in it will support a compass needle from a demonstration compass. (Or a large magnetic compass can be taken apart and the needle from it will work.) Align a wire above the needle in the direction the needle points. Now an electric current through the wire displaces the needle. Also put the current carrying wire under the needle.

2. Tracings on the glass plate from a vibrograph machine show up very well. Wavelengths can be clearly shown by marking right on the smoked glass or whitened glass.

3. Clear plastic rulers, protractors, slide rules, and triangles also work well. Film negatives can also be seen although they are not very large. A spectrogram placed directly on the stage shows the spectrum lines that are recorded on it.

For further information about these demonstrations, please refer to the October, 1962, September, 1963, and March, 1964, issues of *The Science Teacher* magazine; and the February, 1964 issue of *The Physics Teacher* magazine.

MIFFLIN COUNTY DEVELOPS RESOURCE UNITS

The Mifflin County Schools, under the direction of Orren R. Wagner, Assistant County Superintendent, have developed a set of seven resource units for the third grade social studies. The units were compiled by third grade teachers and furnish complete resources for unit type teaching. The sixty page mimeographed booklet consists of a sequence of units on (1) Transportation, (2) Communication, (3) Food From Near and Far, (4) Clothing From Near and Far, (5) Homes Around the World, (6) Indians and Pioneers, (7) Famous Americans.

The purpose of the course is to get third grade children out of the community sooner and into the study of the world. Permission is granted for other school districts to reproduce the material for local use.

Copies may be requested by writing to Orren R. Wagner, 35 S. Brown Street, Lewistown, Pennsylvania. A charge of $1.00 will be made for the bulletin to cover costs of materials and postage.

ALTOONA'S EXPANDED COMPUTER TECHNOLOGY CURRICULUM

By Mr. John J. Branick

Administrative Assistant to the Superintendent,
Altoona School District

The School District of the City of Altoona, Pennsylvania, uses an electronic computer and communication processors to help meet the challenge of today's explosive growth of knowledge. The School District has a very comprehensive teaching program centered around its computer.

Willing and able students are provided opportunities to formulate their own problems, program their efforts, and learn computer operation.

To accomplish this, an oversized classroom is equipped with a General Electric (GE 215) computer, a Datanet-15 (data-communication system), a Disc Storage Unit (DSU) Sub-system and other system components. In an adjoining classroom, IBM Data Processing equipment is housed, thus enabling the Altoona School District to instruct students in the peripheral data processing applications as well as those of computer operation and programming.

In addition, five #33 ASR Teletypewriters were leased from the Bell Telephone Company of Pennsylvania this year and placed in various classrooms in the Senior High School and the two Junior High Schools, in order that students and faculty members may use the computer without having to visit the computer room.

Mathematics classes make use of this system as a tool to demonstrate and clarify basic concepts of mathematics through the use of standard Fortran programming language. In science, especially physics, the computer aids in solving complex scientific problems which would be almost impractical to solve otherwise.

With this system, a person can simply step to one of the remote input stations and enter his problem. Within seconds, his solution is being transmitted to him.

The new General Electric Datanet-15 is an on-line controller that accommodates up to 15 lines of direct communication between a GE 215 computer and remote input and output stations. The Datanet-15 can automatically interrupt the main computer program to process data received from the transmission lines. It uses less than 2% of computer time for normal communications and permits all other sources of input and output to operate concurrently. Thus, instead of students and faculty members waiting in line to use the GE 215 while one program is being processed, they simply call the Datanet-15 from the nearest input location and enter their problem as soon as a "go-ahead" signal is received.

The computer and its remote stations contribute to Altoona's objectives of education: (1) by improving student/teacher relations, the interaction between student and teacher is intensified, (2) by permitting dynamic demonstrations in classroom teaching, and (3) by adding interest and meaning to the course work by demanding problem analysis and concurrent understanding.

Aids and Ideas

HOW TO KEEP LIVE ANIMALS IN THE CLASSROOM

Traditionally, authors of secondary school biology text books have included in their foreword an explanation of the word *biology* — from *bio*, the root form for life, and *logy*, or study.

Yet, more often than not, science rooms have lacked the living things required for meaningful biology study. Plaster models and pictures and diagrams and sometimes preserved specimens are present. But only rarely have real living things been included in the classroom facilities, and even in such cases the animals usually were kept in a separate room, remote and out of sight.

To overcome this handicap to purposeful biology study, an Animal Care Case has been developed by E. H. Sheldon Equipment Co., Muskegon, Michigan. Hamsters, rabbits, guinea pigs, and other small animals can be kept in the science room with no problems of inaccessability, odors, or mishandling.

The Sheldon Animal Care Case is nearly 7 ft. high, 5 ft. wide, and approximately 2 ft. front to back. Four adjustable shelves, each capable of supporting up to 25 lbs., hold animal cages made of metal mesh which are available from laboratory supply houses. The case has glass doors which can be locked to safeguard the animals without preventing observation.

Animal and chemical odors may be exhausted through ductwork to the atmosphere. If this is not feasible the air inside the case may be passed over charcoal filters in the upper compartment and returned to the room.

A thermostatically controlled electric heater, located under the bottom shelf, maintains proper temperatures within the case overnight and during weekends in cold weather.

The educational advantages of having live animals on display and easily accessible for study are gained in only 10 sq. ft. of floor space. The high cost of keeping animals in a separate room in the biology department is avoided. Room costs may run from $11 to $16 per sq. ft., according to national averages.

Literature is available by writing:

American Seating Co.
901 S. Trooper Rd.
Norristown, Penna.

AMERICAN HISTORY TRANSPARENCIES

A series of 19 overhead transparency units on the subject of American history for use with standard 10 inch by 10 inch overhead projectors has been introduced by Cenco Instruments Corporation, 1700 W. Irving Park Road, Chicago 13, Illinois.

The new transparencies are in color and many feature build-up overlays used to develop continuity of themes and subjects.

The transparencies are constructed from plastic laminate with permanent images that are an integral part of the film and will not fade or rub off. Each transparency unit comes with a storage-file envelope (9⅞ inches by 12½ inches) and the entire set of 19 units is enclosed in a storage box.

SOCIAL STUDIES COUNCIL OFFERS AIDS TO TEACHERS

The National Council for the Social Studies makes available to teachers a "How To Do It Series" of pamphlets concerning a wide range of titles. Written primarily for elementary and secondary teachers of social studies, these teaching aids can be ordered directly from the National Council for the Social Studies at 1201 16th St. N.W., Washington 6, D.C. Each copy is priced at 25 cents; discounts are offered on quantity orders.

"The How To Do It" series provides a practical source of suggestions for using instructional materials and technics. Each title includes discussion of a particular technic, and makes concrete recommendations for its effective use in the classroom. A selected bibliography is provided. The list of titles available is too lengthy to be included here; however, the following serve to illustrate the range of topics covered:

How to Work With The Academically Talented In The Social Studies; How To Use Daily Newspapers; How to Use Recordings.

The title *How to Use a Motion Picture* is reviewed elsewhere in this issue of the *Circulator*.

GAS INDUSTRY OFFERS FREE AIDS

The American Gas Association, Inc., through its Educational Services Division, offers a variety of free teaching aids to teachers.

The range of materials includes film strips, wall charts, student study guides, teaching units, and cut-out kits. All materials are graded and there is something available for practically every grade level — primary through senior high. Science is emphasized in most of these aids; however, teachers of home economics, social studies, and vocational counselors will find materials especially prepared for their respective subject matter fields.

There are wall charts showing the network of natural gas pipelines crisscrossing the nation; booklets which suggest and outline experiments with gas for both junior and senior high students; film strips and accompanying teacher guides which tell the story of natural gas and scientists at work in the gas industry; a series of teaching units, with student materials, on science principles as they relate to home appliances, and other types of materials too numerous to mention here.

As with all commercial enterprises that produce free materials for educators, American Gas is interested in selling products and services. It would appear, however, that the material they produce for classroom use are exceptionally well prepared, relatively free from the propaganda sometimes found in similar services, and that these teaching aids can provide a valuable resource to many classroom teachers. For complete information about educational materials available to teachers, write to:

American Gas Association, Inc.
605 Third Avenue
New York, New York 10016

A LOGICAL APPROACH TO MODERN MATH IN-SERVICE TRAINING

Anyone who is teaching or expects to teach a modern program in arithmetic will find Silver Burdett Company's modern mathematics projectuals highly informative and useful. Teachers who have taken courses in modern mathemaitcs at the elementary level or have had some experience with it in the classroom will welcome the summarization of key ideas that the projectuals provide. Teachers who have had no experience with the "new" arithmetic will appreciate this easy-to-digest presentation of the modern approaches. Many of these teachers will be relieved to discover from the projectuals that the "new" arithmetic is not at all the complicated and frightening thing they had imagined, but a sensible and logical approach to a familiar subject.

These projectuals for teacher training are durable transparencies for use with all 10" x 10" (or 7½" x 10") overhead projectors. Color is used to highlight mathematical content. Each base transparency depicts an important idea of modern arithmetic. Accompanying overlays build on this idea, step by step, and develop related concepts. While there is room to write on many transparencies, blank worksheets are also provided. *Set 1 for Primary Grades* is made up of 25 base transparencies, 33 overlays, and 2 worksheets; *Set 2 for Intermediate Grades* has 30 base transparencies, 47 overlays, and 2 worksheets.

Because they are colorful, attention-getting, and intrinsically interesting, *MODERN ARITHMETIC PROJECTUALS* are also ideal for use with PTA groups and in adult education.

These in-service training materials may be purchased with the assistance of N.D.E.A. funds.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF PUBLIC INSTRUCTION
LOCK HAVEN STATE COLLEGE
Lock Haven, Pennsylvania 17745

U. S. POSTAGE
PAID
Permit No. 92
Lock Haven, Pa.

DPI MAKES ECONOMICS TEXT AVAILABLE

A text on economics prepared by Lawrence C. Murdock, Business Economist, Federal Reserve Bank of Philadelphia, has been given to the Pennsylvania DPI for further distribution. This text includes a series of illustrations from which overhead projector transparencies may be made and notes designed to be used in conjunction with the DPI curriculum development series booklet number 4, *The Universal Economic Problem*.

This material was designed to be the basic outline of a high school economics course. The transparencies are highly simplified to illustrate basic principles. The text explains, in a general way, how to use the transparencies, and outlines some of the major points the teacher might make in his presentation.

The text is in no way intended as a complete set of lecture notes. The teacher will need to expand, amplify and illustrate with additional material.

This text, *High School Economics Presentation*, is available FREE to high schools by writing to Dr. Stanley Miller, Director, Bureau of General and Academic Education, State Department of Public Instruction, Box 911, Harrisburg, Pennsylvania.

NEW SOCIAL STUDIES FILM

The Bell Telephone System has sponsored production of a 28 minute color 16mm film treating the progress of peoples in underdeveloped societies. *Beyond All Barriers* emphasizes the role of communications as an important aid to millions of people in the world who are striving for technological excellence and greater human productivity. Its focus is on man in Africa, Asia, South America and Europe. The film will interest junior high through adult age groups. It may be obtained FREE by writing to:

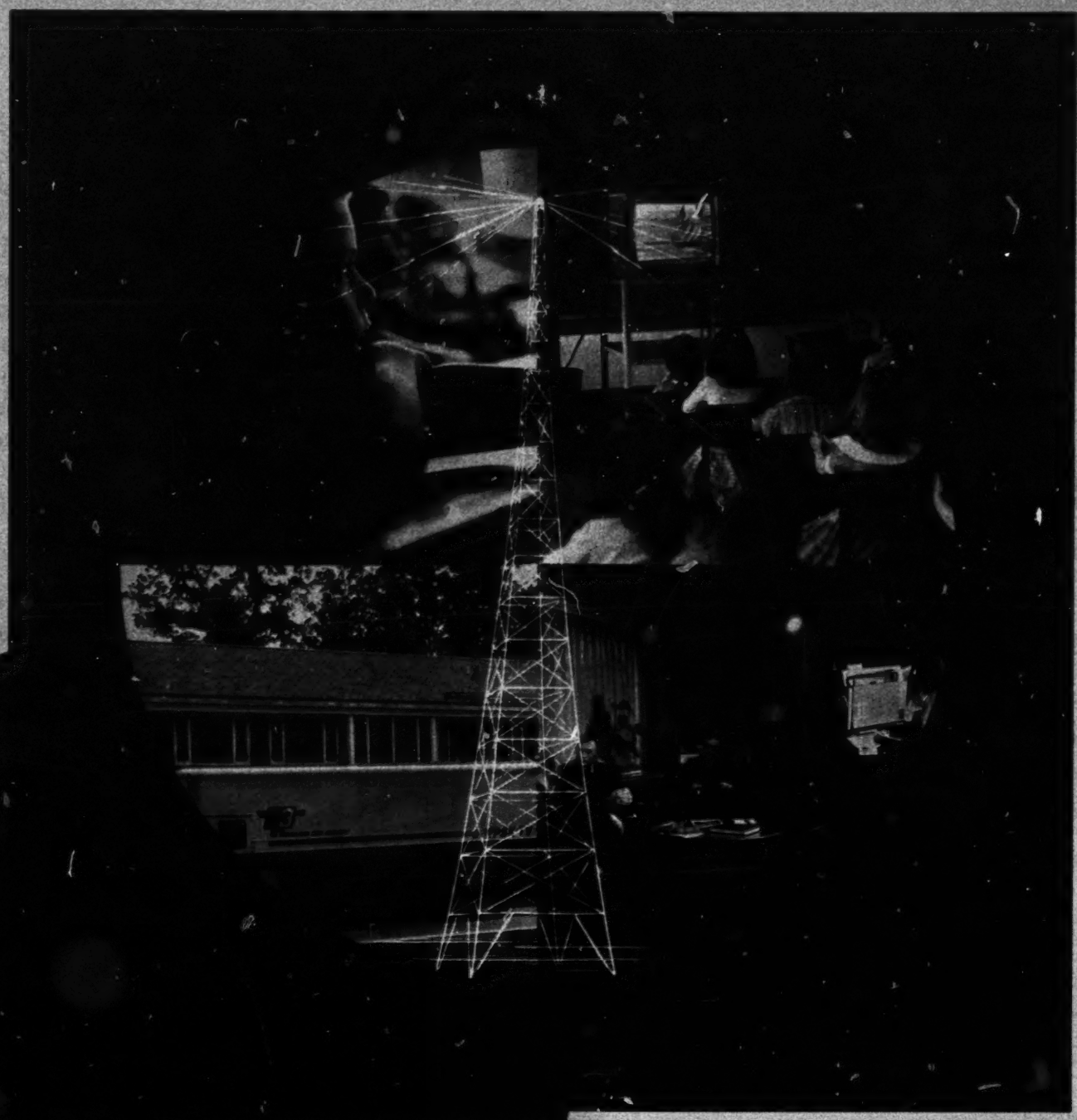
Sterling Movies U.S.A.
375 Park Avenue
New York, New York 10022

Best Holiday Wishes

to All

VOLUME II, NO. 4

JANUARY, 1966



CULATOR

AREA 6 CURRICULUM CENTER / LOCK HAVEN STATE COLLEGE / LOCK HAVEN, PENNSYLVANIA

AREA SIX COORDINATOR: C. H. LARSON

EDITOR: E. M. NUSS, D.Ed.

From the Editor

In this issue of the *Circulator* special attention is given educational television. Feature articles and reports from schools in Area Six describe developments and activities in instructional television. Of special interest to teachers is a most informative article by Mr. Paul Kurtz, President, Allegheny Educational Broadcast Council.

We should like to point up two major aspects of this technological innovation which we feel are of special significance to educators in Area Six.

First, the realization of an educational television facility for Central Pennsylvania was a grass roots, highly cooperative endeavor, involving public school educators, DPI personnel, and the Pennsylvania State University. While support and encouragement came from sources outside the Channel #3 Area, the impetus, organiaztion, programming, and production of educational television were essentially a regional effort. This is as it should be, and those whose imaginations and energies brought this new medium to the schools of Area Six deserve the commendation of all who believe that education should continually seek new and better paths to learning and that innovations best serve the cause of progress if they are locally inspired and controlled.

A second consideration is the role of television in education. There is no longer any question about the importance of ETV in education; it is already playing a significant role in teaching and learning around the world. A more relevant question is, how can the school and the teacher make the best use of television? Here there is still need for imagination and experimentation; however, a considerable background of ETV usage and research is available to serve as a guideline. The extent of previous experimentation in the use of ETV is suggested by the attitude of the Ford Foundation, which between 1951 and 1963, gave *$86.4 million* to help establish television as an educational medium. In their 1963 annual report, they said, "The Foundation decided this year that classroom television has become sufficiently established to make unnecessary further large scale support from the Foundation."

Thanks mainly to the initiative and foresight of local educators, most schools in the 22 county Allegheny Educational Broadcast Council region have access to instructional television. However, television has no superego; it will transmit the bad as well as the good and thus it requires the constant cooperation of teachers and programmers to insure that only the good is selected. Also, television is only a tool; it may be a good tool, but even the best implement is no better than the person using it. Here the role of the teacher is paramount. Television can be successful only where teachers make wise and imaginative use of their new aid.

In Central Pennsylvania, ETV began as a cooperative venture among educators from all organizational levels. Developments thus far suggest this cooperation will continue, and that instructional television will make a significant contribution to education in the participating schools.

Instructional Media
(New Ideas, Methods, Research)

STATEWIDE PLAN FOR ETV

By Mr. Blaze J. Gusic

Coordinator of Educational Radio and Television, Bureau of Instructional Materials and Services, Department of Public Instruction.

Finally framed by the Department of Public Instruction, the current plan for the development of educational television in Pennsylvania is the result of twelve years of careful engineering and educational surveys and studies. It is based upon the recommendations for the Department's State Advisory Committee on Educational Broadcasting, commercial and technical agencies, and the Pennsylvania Educational Television Network Study. In accordance with Section 523 of the School Laws of Pennsylvania, basic policies concerning this Plan have been submitted to and approved by the State Board of Education.

The rationale for this Plan is that educational television is a most effective and economical teaching aid. It can bring unusual and contemporary materials and outstanding experts into classrooms, homes, and all types of teaching techniques in elementary and secondary schools. It can expand the use of college staff and facilities, and make higher education available to all, no matter where they may live. It can offer unique

educational opportunities and improve teaching techniques in elementary and secondary schools. It can provide graduate and in-service education for professional groups such as teachers, doctors, nurses and engineers. It can expedite manpawer retraining and play a strategic role in stimulating Pennsylvania's economy. It can offer vastly increased cultural opportunities to all. It makes possible increased public discussion of important issues — local, state, and national — to develop an informed citizenry and resultant intelligent participation in the democratic process.

The goal for our Statewide plan for educational television is service to 100% of the Commonwealth's citizens.

To date the following has been accomplished:

1. The Philadelphia and Pittsburgh educational television stations operate two channels each.

2. In November, 1964, WITF, Channel 33, Harrisburg began operating, serving nine counties.

3. On March 1, 1964, WPSX-TV began operating Channel 3, with studios at University Park and a transmitter at Clearfield, serving a twenty-two county area.

4. In September, 1964, the Lehigh Valley Educational Television Corporation began operation of Channel 39 at Allentown.

5. Soon as possible, Erie hopes to activate Channel 41 and the Wilkes-Barre-Scranton area Channel 68 or 44. Thus, within the next year seven Educational Television Stations are expected to be operating nine channels.

6. Translators are extending signals into Mercer and Franklin counties.

7. Specifications have been completed for a Statewide network integrating all stations, and untimately connecting with other programming services.

8. The Commonwealth of Pennsylvania appropriated $970,000.00 for educational broadcasting in 1963-64, $1,000,000.00 in 1964-65, and $9,050,000.00 in 1965-66. Grants have been given to stations for legal and engineering services, for equipment, and for programming.

9. The Department of Public Instruction has awarded grants for purchase and production of over 280 hours of outstanding educational television programming and have acquired others for a total of over 500 hours of programming. These programs are available free of charge for broadcast.

10. A State Plan for Closed-Circuit Television at Pennsylvania's State Colleges has been adopted and is being implemented.

11. We are now planning the Statewide use of radio for educational purposes. Our library consists of over 1,200 programs.

As indicated by the developments to date, most educators will readily agree that television is one of the most powerful devices for mass communication. We, at the Department, believe an immediate area of concern is proper utilization. It is essential for us all to explore ways and means of helping teachers improve their use of this audiovisual tool for more effective instruction.

Included in our plans for instructing teachers in Pennsylvania on television utilization are (1) Workshops and conferences and (2) In-service courses over television.

The development of television to its fullest potential can be brought about only by everyone's participation. Just to donate funds, or to subscribe, or to lend token response is not enough. Together we must expend our energies for the benefit of our populace. Our plans, your plans, and the plans of all in the United States, can only be successful through the same spirit which has developed educational broadcasting to date.

BROADCAST DIRECTOR COMMENTS ON ETV IN CENTRAL PENNSYLVANIA

By Marlowe Froke

Director of Broadcasting, The Pennsylvania State University

On March 1, 1965, in-school television services to schools in Central Pennsylvania began on WPSX-TV, Channel 3. Since then the service has become an integral part of the educational programs of some schools in the area, and an identified potential in others.

In the few months that the service has been offered through WPSX-TV, we have come to know many teachers and school administrators. Their interest and their dedication to educational television are, to the station staff, among the most exciting aspects of the TV project. The invitation extended by Lock Haven State College to present materials about the project in this publication is yet another example of the cooperation and good will which have characterized the development of WPSX-TV.

Some of the articles in this publication were written by members of the station staff and officers of the Allegheny Educational Broadcast Council. Although the emphasis in most of the articles is on in-school services, we have included some materials about other educational television services.

I hope that they provide some of the information that you seek. We welcome any inquiries for additional information.

WPSX-TV, CHANNEL 3: WHAT IT IS AND HOW IT FUNCTIONS

WPSX-TV, Channel 3, is administered by the Division of Broadcasting, an administrative unit of Continuing Education of The Pennsylvania State University. It is authorized by the Pennsylvania Department of Public Instruction as a broadcast center in the State Plan for Educational Television.

In-School Services of WPSX-TV are provided in cooperation with the College of Education and the Allegheny Educational Broadcast Council, a non-profit corporation of school and community leaders. Its Council of Participants includes representatives of all schools served by the Council and the station. The station solicits the advice of the Council in programming other than in-school services.

Within the University, a University Advisory Committee on Broadcasting meets monthly with the administrative staff of the station to discuss programing and operations of the station. Members of the committee include representatives from each of the colleges and other major administrative units of the University.

As a unit of Continuing Education of the University, WPSX-TV has one fundamental purpose: to serve those people who request or require continued education both in their personal development and in their constructive pursuits.

In meeting this purpose, the station prepares and schedules programs that

1. Educate, inform, stimulate, encourage and train individuals, groups, organizations, and agencies.

2. Provide cultural advantages to the citizens of the Commonwealth.

3. Develop a sense of unity among the diverse regions of the Commonwealth.

4. Assist in the economic and cultural development of the Commonwealth.

The relatively small professional staff of the station is supplemented through working relationships with several technical and service departments within the University. These include the Division of Instructional Services, Agriculture Communications, Public Information, Audio-Visual Services, Correspondence Study, and others.

PRESIDENT, AEBC, ANSWERS TEACHERS' QUESTIONS ABOUT ETV

Mr. Paul Kurtz

Superintendent, Blair County Schools is the President of the Allegheny Educational Broadcast Council. He is recognized as the individual most responsible for the organization and development of the educational television facility now available to communities in the 22 county area served by WPSX-TV.

PAUL KURTZ
Superintendent of Schools, Blair County and President, AEBC.

Question: Are instructional television programs available for teachers in Curriculum Area VI?

Answer: Fortunately, more than thirty hours of top-rated programs are available in the Curriculum Area VI. The prime channel for this area is #3 (WPSX-TV) with WFBG-TV and WJAC-TV assisting.

Question: Are these programs available for both the elementary and secondary schools?

Answer: Programs for both are available.

Question: How can I find out what is on the air during the school day?

Answer: The Allegheny Educational Broadcast Council has mailed to each chief school administrator of Curriculum Area VI a copy of the "Program Guide" — 36 pages, 8½ x 11 "Cerclabound", cover printed in red. On pages 32 and 33 of this guide the full schedule for the entire in-school service of all three stations is given. The major portion of the Guide describes each course and shows the date and title of each broadcast lesson.

Question: Our chief administrator has lost or has never received the Program Guide. What can be done?

Answer: He can secure another copy free from the Allegheny Educational Broadcast Council, 201 Wagner Building, Pennsylvania State University, University Park, Pennsylvania 16802.

Question: Will there be a Program Guide available for each building in our district?

Answer: Yes, if your district becomes a member of the Council of Participants. Otherwise only one Guide is sent free to a district.

Questions When I have chosen the programs I want to use, what do I do next?

Answer: You should present your plans to your principal. If your district is a Council member, he will secure the Teacher's Guides you will need for your chosen courses. These Guides are the teacher's best friends. Without them you cannot fit the lessons into your course of study, nor prepare your pupils to receive the telecast, nor do the necessary drilling and discussions. Since the year has started already, you may have to receive a lesson or two before you are properly equipped with a Teacher's Guide; but you should complete your arrangements as rapidly as possible. The blending of the television presentations into your course of study is a primary consideration for the year's planning and will change the television lessons from entertainment to instruction.

Question: If I find that our school system is not a member of the Allegheny Educational Broadcast Council, can I secure a Teacher's Guide?

Answer: They are not available on an individual basis. The cost of bringing television programs to the schools in this area during the current year was $50,000.00. The television signal itself is entirely free and uncontrollable. You could receive the signal on any receiver. Obviously, on the other hand, there must be some way to share the program costs among the schools of the area. The control point agreed on by the Council is the Teacher's Guides. If your school is not a member of the Council, you might well discuss this with your principal.

Question: What is the Allegheny Educational Broadcast Council?

Answer: It is a voluntary association of the school districts in the area served by WPSX-TV. All school districts are invited to join. Membership depends on paying a per-pupil assessment set annually by dividing the budgeted expenses among the anticipated ADM of the schools using the television service.

Question: What is the purpose of the AEBC? Is it a collection agency for television costs?

Answer: The financial part of Council work is of real but lesser importance. In general we can say that the Council is the VOICE OF THE TEACHERS AND ADMINISTRATORS IN THE SERVICE AREA EXPRESSING THEIR CURRICULAR NEEDS AND WORKING TOGETHER TO MEET THESE NEEDS ON A VOLUNTARY BASIS. More specifically we might say that the Council

1. Tries to secure valid judgments of where the curriculum of the common schools need enrichment.
2. Buys or produces the best possible lessons to meet these needs.
3. Enlists the best classroom teachers and college personnel to do the job.
4. Informs the districts of its area of schedules and other data necessary to use the programming.
5. Seeks "feed-back" from the teachers using the lessons so that the material broadcast may be further adujsted to the needs of our own area.
6. Produces and furnishes special tools in the form of teacher's guides needed to use the television programming.
7. Gives information and other technical help in making the television signal available where teachers have trouble receiving it.
8. Tries to enlist the interest of lay groups and commercial television stations in helping to furnish classroom television.
9. Conducts workshops and in-service meetings to assist teachers in using television effectively.
10. Conducts the business and financial work required by the foregoing program.
11. Protects the interests of our area in the technical break-throughs that will occur in the next few years.

Question: Can television take the place of the teacher in the classroom?

Answer: Certainly not. Television without the help of a teacher would be as fruitless as a teacher's trying to use the television lessons without a teacher's guide. Television is a tool just like a textbook or a blackboard. It may be one of the most important aids to teaching that has ever been invented. We probably don't know yet how to get the best from it, but we will find pioneering with it pretty exciting.

Question: Are there good courses for every subject?

Answer: Certainly not. For some subjects there are no *good* courses yet. Perhaps you may be the person to develop material to fill one of these empty spots.

Question: Can a teacher do anything with television if he has not had a course in using it?

Answer: Certainly. Good teachers are always adaptable and resourceful. The program guide has some good suggestions. Your attending a "Utilization Workshop" will be helpful and enjoyable but there is no reason for not stepping out on your own.

Question: Where and when are television "Utilization Workshops" held?

Answer: They can be held at any time and place if a reasonable number of teachers can be brought together. Their programs are planned to run from six to thirty hours as the group thinks best. The Council needs to know where there are clusters of interested individuals; therefore, address inquiries at any time to 201 Wagner Building, University Park. And, by the way, some utilization programs for teachers are already included in the regular schedule, notably Beginning French and Modern Math.

Question: I have trouble receiving a good signal from WPSX-TV; what should I do?

Answer: You should talk to your local television repairman or distributor first. He should know if there is any reason for poor signal strength generally in your area. A technical bulletin can be secured from AEBC which will describe the equipment that will serve you best. A call to WPSX-TV — UN 5-6305 would be in order from your television serviceman if he feels you have a special problem.

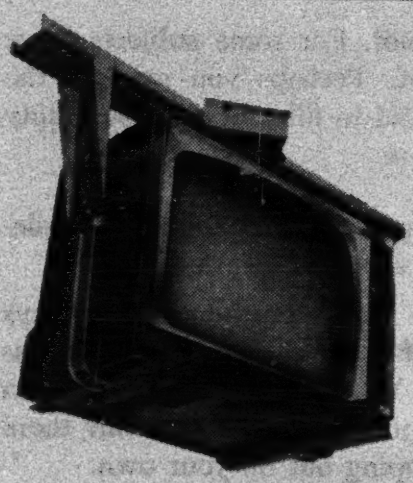
Note: However, most of Curriculum Area VI lies in prime viewing distance from the transmitter. Also, it is of interest to the AEBC to know where there are substantial areas where the signal cannot be received. It is the ultimate aim of the State Advisory Board to make instruction by television available to every child.

Question: Is a special receiver necessary to pick up the ETV programs of WPSX-TV?

Answer: No, a standard television broadcast receiver should work.

Question: Can any financial help be secured for getting started in the use of ETV?

Answer: Funds are available under NDEA for purchase of receivers for use of the NDEA approved school subjects. It is also suggested to explore the provisions for funding ETV costs through ESEA, Title I.



A Wilson TV wall or ceiling mount.

CLASSROOM TELEVISION — USE IT AND CHOOSE IT!

By H. Dennis Shenk

Coordinator, In-School Services, Division of Broadcasting, The Pennsylvania State University

Some sections of the country are already celebrating a decade of successful television utilization. Still other areas, such as the central region of Pennsylvania, are only now experiencing classroom television for the first time. But whether television is today an accepted adjunct to a school system's instructional program or a new device to be tried, tested and integrated into the curriculum, there is general agreement that classroom teachers must play two key roles if instructional television is to be successful and achieve its maximum potential. First, the classroom teacher must make a serious effort to understand it in order to use it effectively; and second, the teacher must be a part of the professional team which plans and chooses it.

Anyone who has played a part in the initiation and development of an area's instructional television program will have experienced certain common reactions on the part of the classroom teacher to the adoption of televised instruction. Sometimes classroom television becomes a reality for a teacher before that teacher has had time to analyze his role in relationship to the medium. Hence, certain questions come to a teacher's mind which need answering before she can overcome the frustrations and anxieties that arise from the contemplation of in-school television.

Teachers ask, for example, can television extend and improve the kind of education for which they have traditionally been responsible? They are concerned about whether it will raise or lower the prestige of their profession. They question whether the money spent in instructional television might better be spent in other ways. In the face of conflicting reports from TV literature and research, they aren't sure what to expect.

In spite of these uncertainties, most teachers are willing to explore new methods and new techniques if it can be demonstrated that television can make a worthwhile contribution in their classrooms. Teachers seek the kind of information that will provide them with some understanding of what television can do for their pupils, what techniques they might employ to help them use it effectively, and how they can become most directly involved in the selection and planning of programs to be viewed in their respective schools.

There are some rather well established principles, some rules of thumb, that can be cited to prepare teachers for their first experiences with instructional television. For example, the routine mechanics associated with the "before," "during," and "after the telecast activities," which become the responsibility of the classroom teacher, may be pointed out; the use made of, and the contributions made by, the various guides and manuals to the teacher's individual lesson preparation can certainly be noted. But it must also be emphasized that no set of activities for the utilization of television lessons can be prescribed that will achieve equally valuable results with the heterogeneous groups of students watching a program throughout even a single school system.

A first step, then, in helping that teacher who is meeting instructional television for the first time would be to point out that there is no formula for using television effectively. The teacher must realize that television has no magic of its own, apart from wise program planning and creative and imaginative utilization.

A further step the teacher must follow is to select (often with the help of the chief school administrator) the programs or series of programs which will be helpful and, in some cases, vital to the attachment of teaching and curriculum objectives. Series must be selected for specific purposes. They must be selected on the basis of the type of television which will best meet the needs of the pupil and the teacher. Are the requirements those of enrichment, for which television will provide the supplementary experiences individual teachers find it difficult if not impossible to provide? Shall television provide a major resource and bear the main burden of formal course presentation? Or, as required in rare cases, shall television provide total teaching in an area in which existing staff and facilities are otherwise unavailable? The wise use of television, then, is predicated on the assumption that the classroom teacher understands the differences in these types, in their purposes and design, in their method of presentation, and in their place in the total learning process.

Given a basic understanding of television with, hopefully, the development of a positive attitude toward it, there must come a serious commitment on the part of the teacher to use it. The tasting, trying, and sampling of television programs without adequate preparation should be discouraged. Too often a teacher will "tune in" a program with her class in the same way one might preview a film. The teacher is not prepared for the experience; nor, consequently, is the class. She may not have the necessary materials, guides, and manuals to make an exposure to the program the type of experience it can be and should be. This same teacher may, at the completion of the telecast, turn off the set and move on directly to another of the day's scheduled activities. The result is predictably unsatisfactory and a disappointment to both teacher and pupil.

Purposeful viewing is the logical step following wise selection and preparation. Whenever the classroom receiver is turned on, every experience should include these qustions: 1) What am I looking for? 2) Why and how should I look for it? 3) What do I do about what I see? The skilled classroom teacher who knows the student and his needs, who is creative and imaginative, will properly prepare herself and her pupils for the television lesson and will select activities following the telecast designed to challenge and motivate the students. This, in essence, is *using* television.

The classroom teacher's responsibility, however, must not stop here. The teacher who uses television must also become involved with and participate in the choice and planning of the programs. This requirement applies certainly to established in-school broadcast services, but especially to those operations which are in the early formative stages. There seems to be precious little voluntary feedback from classroom teachers to the instructional programs they are using in their classrooms. Those persons responsible for program selection and planning are eager to get reactions from teachers about whether specific series are an asset to the teacher and whether they are meeting the teacher's needs and are leading to stated goals. The program and schedule planners are also interested in getting the teacher's reaction to appropriate length, types, and levels of televised lessons. They earnestly seek suggestions for new series for regional production which will answer local needs.

The channels for communicating teacher reactions are generally present, though not always clear to the teacher. Certainly formal evaluation surveys, questionnaires, and comment forms are typical techniques used to trigger teacher response. Over-zealous evaluation activities, however, are generally resented and may give rise to accompanying negative attitudes. Teachers may often use their administrators or representatives on program curriculum committees to accomplish the same ends. An occasional comment by phone or mail directed to the school broadcasting agency provides a welcome and satisfactory method for appraising program committees of teacher reactions and desires.

As we continue to interest and inform the teacher about television and television utilization, a continuing effort must be made to promote communication between studio and classroom teacher. In addition to the channels already noted, workshops, conferences and visits to the schools can serve the same purpose. It is imperative that classroom teachers maintain contact with the studio and make their wishes and needs known.

ADULT EDUCATION BY TELEVISION

By Floyd B. Fischer

Director, Continuing Education, The Pennsylvania State University

The possibilities for the use of educational television in the various phases of adult education are so exciting, stimulating, and virtually endless that it is difficult to visualize just how great the impact may be in coming years.

But assuredly the medium of educational television should become one of the most useful tools in carrying out the fundamental purpose of adult education or continuing education at Penn State — providing educational programs and services to all the people of Pennsylvania who need and want them.

As the Land Grant State University for the Commonwealth, Penn State has the obligation to provide resident instruction, research activities, and continuing education "at times and places convenient to the University and to those it serves."

During the last half century, continuing education courses and programs have been offered through extension classes, correspondence instruction, conferences, seminars, workshops, and short courses; instructional films and recordings; and discussion .groups And since flexibility is a principal characteristic of continuing education, it is certain that the faculty and administration of the University will quickly make extensive use of the new educational television facility, WPSX-TV, Channel 3. It is the latest development in our constant search for new ways and new methods of making the University a vital institution in the educational pattern and in the economy of the State.

Educational television will enable us to provide programs, for instance, for persons in specialized fields who are scattered throughout many counties. It will enable specialists in education to reach a much wider audience, and to reach them frequently. It will permit participation by persons who for various reasons cannot take part in other types of educational programs.

Feedback on the effectiveness of television programs is possible through the field staff of the University's Continuing Education services, which includes district administrators in each of the larger population areas of the State, and conference coordinators at the Conference Center on the University Park Campus.

Thus, through the addition of WPSX-TV, Channel 3, to our Continuing Education services we expect to bring quickly and directly to residents of the Commonwealth the freshness, adaptiveness, and creativity of their State University.

E.T.V. IN HANOVER: A BRIEF CASE HISTORY

By Mr. C. T. Fenstermacher

Elementary Coordinator, Hanover Schools, Hanover, Pa.

In 1950 the Hanover Borough School District received its first television set. The set was donated to the High Street Elementary School by the PTA. Presently on my desk is the plan for a $77,000 Federal Grant for E.T.V. How this development in the use of television has occurred in a community of 15,000 is not the main point of this article, but I feel the fact that it did occur should encourage other schools who are considering E.T.V.

Following the donation of the first set we soon had a set donated to each elementary school and in the late 1950's a set was donated to the junior high school. Viewing was limited to educational daytime programs of commercial stations selected for their educational value by the teachers. Television was nonexistent in the senior high school until 1962.

Scheduling presented almost insurmountable problems in utilizing various educational programs that were being broadcast by commercial stations in the area. Occasionally, rental receivers were placed in the school auditorium for special news events.

In the spring of 1962 WGAL-TV, Lancaster, Pennsylvania, presented a series of advanced math programs at 6 A.M. A high school mathematics instructor felt this material was of great value and the local audiovisual director began looking for a video tape recorder that would be reasonable in cost and functional in a public school setting.

On March 24, 1963, a recorder was purchased and placed in operation, thus establishing Hanover as the first public school district in the United States to utilize the retrieval method of television instruction with this type of equipment.

This was the beginning of our experience in E.T.V. Purchase of the recorder was followed by the development of a control center for the projtct. A master antenna and coaxial distribution system were installed serving eight teaching areas. Several 23 inch classroom television receivers were purchased and we were in business. Programs were recorded as requested and retrieved by teachers for classroom use.

Later a telemicroscope unit was purchased. This made it possible to greatly enlarge microscopic and opaque obejcts for the science classes.

The main advantage of the retrieval of education television programs in the Hanover School District are as follows:

1. It has eliminated many problems of scheduling.
2. It has created a library of non-repetitive programs that can be used year after year.
3. The services of resource people have been made available to both teachers and students without making undue demands upon the resource person's time and availability.

In September 1964 the district opened its new senior high school. The experience we had in the old building aided our planning for extended E.T.V. in the new senior high school.

This may appear, thus far, to be a routine operation. I assure you there were several dedicated people who gave generously of their time and effort to master the many technical and practical problems that were encountered.

Our first productions were much like home movies; however, the present product is greatly improved and, in the opinions of some, may even have a professional touch.

As you can see, the elementary schools have not had a service equal to that of the senior high school. The proposed program will provide equal service by the use of a 2500 megacycle television transmitter and compatable receiving units located in each elementary building and the junior high school.

The advantages of E.T.V. are not universally consistent. Each district, each teacher must examine the possibilities in each local setting. However, I feel the contribution of television as an educational tool is only as limited as one's imagination.

The purchase of the first camera and completion of a program will most likely be the beginning of a new era for teachers and children in any district.

The Hanover Borough School Board, Teachers and Administration extend an invitation to persons interested in E.T.V. to visit and become acquainted with our program.

EDUCATIONAL TELEVISION APPLICATIONS FOR EDUCATIONAL NEEDS

This article consists of the major ideas presented by Herman P. Taub, President, Continuous Progress Education, Inc., Wilton, Connecticut, for the P.S.E.A. Central Region Convention, Clearfield, Pennsylvania, October 8, 1965.

Educational engineers trained in both engineering and learning theories are more in demand as the capabilities of new technology and instructional media are established. They need to "understand the science of teaching and fully appreciate the individual personal aspects of the art of learning."

The professionalization of the role of the educational engineer must be accompanied by a greater appreciation of engineering science by the professional teacher. One of the activities of the educational engineer is to familiarize teachers with the educational capabilities of technology.

Both the teacher and engineer must keep in mind the educational objectives of their joint undertaking. All too often, educational objectives are forgotten in the fascination of "utilizing new technology," and the problem is presented as "How can we use or obtain greater use of the technology (films, television, rear screen systems, language laboratories, etc.)?" The basic problem to which the educator and the educational engineer should direct their attention is "How can we better realize the educational objective?"

"Educational objectives are also forgotten in the preoccupation and fascination with gimmicks and gadgets. I use the term 'gimmicks' and 'gadgets' advisedly; if we, the educational engineer and the teacher, permit ourselves to lose sight of our educational goals and responsibilities in working with technology, then we are merely indulging in gimmickry and gadgetry."

The educator must first define educational objectives if the engineer is to effectively serve him. The educator must analyze the needs of the students and the learning process — and must act as the final authority in evaluating the suitability of technology to assist in fulfilling these needs. The educational engineer should recommend and develop systems which can facilitate the learning process desired by the educator.

In this relationship the educator must retain live responsibility and authority for the learning process; the engineer serves him as a staff resource. Clarification of the proper role of the teacher and engineer — (and, similarly, the instructional materials staff, the audio-visual staff, the curriculum staff, etc.) is essential

to an effective relationship. "In learning-theory terms, the appropriate steps in applying technology would be as follows:

1. Definition by the educator of terminal behavior desired of students (individually and in groups as applicable).

2. Evaluation by the educator of their present behavior, (i.e. — their present understanding, skills and attitudes.)

3. Specification by the educator, with staff assistance, of the most promising learning experiences for the students to develop the desired terminal behavior.

4. Development by the educational engineers, with the educator, of the physical plant and technical devices which will facilitate realization of the specified learning experiences."

"There are three basic functions being performed by educational television today, we call them *standardization, individualization* and *performance analysis.*"

"*Standardization* is the use of good educational programs to reach a large group of students. These programs may originate off-the-air, may be recorded off-the-air and be rebroadcast at more convenient times — or may be obtained from some of the excellent video tape libraries being set up around the country. The educational advantages of this type of system are that a student may be learning experiences which may be of a consistently higher quality than could be otherwise offered. At the same time, such a program is easy to implement using a minimum number of technical and professionally trained personnel.

The educational disadvantages of such a system are that it does not offer opportunities for individual learning experiences because of the limited number of channels. Such a system tends to create a larger lock-step learning process, which could seriously interfere with educational programs designed to encourage each student to realize his own maximum potential and to accept responsibility for achieving his own educational goals.

From an educational viewpoint, the *individualization* function of television is almost completely opposite in character. In such a system, a much larger number of good educational programs is made available to the students and teachers to facilitate highly individualized learning experiences and educational goals.

The educational advantages of such a system are that it offers opportunity to individualize the student —and simultaneously to accommodate large and small groups of students.

I want to be careful to differentiate between individualized experiences and individual experiences. Individualized experiences implies that students clustered around a common learning need may meet in small groups, in medium-sized groups, and in large groups — but in all cases they have been selected according to learning need. Individual study is included as one of the experiences which might be advantageously used by the student. Hopefully, through such a personalized program, we can expect increased self-motivation of the student and a program which will enable each student to more closely realize his own maximum potential. At the same time, such a program can better develop the attitudes and abilities necessary for a student to accept and carry out responsibility for his own learning.

The disadvantages of utilizing television for its individualized function is that it requires a great deal of staff preparation for effective utilization. The staff must be retrained to think in terms of individual student needs. Staff must be provided to select programs and provide information on these programs in a usable form to individual teachers. Such a program is relatively more expensive in both equipment and in manpower.

The third function which can be performed extremely well by educational television is *performance analysis.* Under this category, a wide variety of applications is possible. Students in music, language, drama, dance, sports and anything else which requires manipulative skills can learn more effectively when confronted with an immediate TV picture of their past performance. Various types of automated systems have been developed to automatically provide a student the opportunity to practice his performance and observe and correct his replay.

In addition, under the category of performance analysis, teachers, counselors, psychologists and others involved in a personal interchange, may use the video tape recorders as a unique technique to analyze a previous performance. In such cases, the performer invariably discovers aspects of his behavior of which he would not otherwise be aware. Here again, a variety of systems is available which provide for automatic remote control of television cameras to record the performance under various degrees of secrecy. It should be noted that as far as students are concerned, the presenc of a camera is soon forgotten and the student reverts to a normal un-selfconscious behavior.

A third category of performance analysis involved equipment, — and process. Television provides a unique opportunity to analyze a machine action by

virtue of its ability to capture a sequence and then immediately display any particular frame of that sequence individually with stop action.

These are some of the functions which we have found to be successfully performed by television. I hope they have suggested to you applications in which television may help provide the educational experiences you require in your school systems."

NEW LOW-COST VIDEOTRAINER ON MARKET

A new low-cost professional videotape recorder and a mobile videotape recording system for closed circuit use in education were recently placed on the market by Ampex Corporation. Both units were displayed for the first time at the National Association of Educational Broadcasters' convention in Washington, D.C., November 1-3, 1965.

The Ampex VR-7000 videotape recorder, which records high quality television pictures and sound on magnetic tape for immediate playback, is priced at $3,150, a third of the cost of previous Ampex recorders of similar performance and durability. The 78-pound unit is offered in a rugged luggage mounting.

The Ampex VR-7100 Videotrainer combines the new recorder with a television camera, television receiver and all related equipment necessary for the production and display of videotape programs. The Videotrainer, self-contained in a heavy duty, compact mobile console, is priced at $5,945.

These units are designed to fill the gap between broadcast-quality portable videotape recorders and those built specifically for home use. They will serve the expanding requirements of closed circuit television in schools and colleges, industrial and military training, medical research and practice, merchandising, sports and a growing number of other applications. They both operate on standard 110v current.

The VR-7000 permits a recording time of 63 minutes on a 3,000 foot reel of video tape and it has a stop-motion capability. The single video head is guaranteed for 500 hours of playing time assuming a prescribed adjustment is made at 250 hours.

The VR-7000 is designed to complement the widely used Ampex VR-660 series recorders. Master tapes made on the model 660B, which sells for $11,500, may be duplicated for playback on the lower priced VR-7000. Tapes recorded on VR-7000's may be played back on another VR-7000, permitting exchange of educational or training materials.

The Videotrainer system offers complete closed circuit videotape production capability in a self-contained package easy to operate and maintain. Programs produced with the Videotrainer may be played back on a number of conventional television receivers for classroom or other remote viewing.

Domestic marketing of the two new products will be through closed circuit television systems distributors and will begin this month for the VR-7000 and next February for the Videotrainer. International versions of the two systems will be available in 6 months.

For further information contact:

John B. Hatch
Ampex Corporation
Regional Public Relations Manager
75 Commerce Way
Hackensack, New Jersey 07661

The new self-contained Videotrainer.

Area Six Schools
(Events, Projects, Views)

SUPPLEMENTAL-DEVELOPMENTAL READING PROGRAM

By Richard K. Grove

Director of Secondary Curriculum in the Tyrone Area Junior-Senior High School

During the past decade or so, there has been increasing recognition among educators that reading is a learning skill that can and should be developed continuously through all levels of school. It has always been recognized that reading is a fundamental skill underlying academic success. However, it was not always considered as a skill that continues to develop significantly beyond the first few years of school. This approach to improving the skills of normal or above-average students (as opposed to remedial reading, which aims to develop greater reading ability in those few students who suffer major reading defects) is known as developmental reading.

The primary goals of developmental reading are 1) to develop capacities and habits that lead to more rapid reading, given particular reading purposes and difficulties in material; 2) to develop comprehension skills that result in more critical and perceptive reading, and greater recall of what is read; 3) to develop stronger reading vocabulary, which underlies both rate and comprehension, and 4) to develop greater appreciation for reading, and literature in general, resulting in more and better reading.

Beginning this year, all eighth grade students in the junior high and all eleventh grade students in the senior high will be receiving an intensified supplemental developmental reading program. The equipment and material being used in this program include a Tachomatic 500 Reading Trainer and Training films, Comprehension and Vocabulary Tests, a Reading Workbook and a student progress chart. Junior high students will be working with Level I reading materials for three periods per week for ten weeks while senior high students work with Level II reading materials for two periods per week for a ten week period. Emphasis is being placed on the development of skills in a manner not too dissimilar from building a skill in shorthand and typewriting.

While alternative film approaches vary in detail, they all serve essentially the same purpose. They are designed to develop more acute perception on the part of the reader, particularly in terms of perception span — the number of words that are perceived in a single glance. Films tend to result in greater speed of perception as well, since they offer only a limited time in which to see a given piece of material. By increasing the span and speed of perception, wasteful reading habits, such as word-for-word reading and vocalization, tend to disappear.

Reading films also develop improved rhythm and more efficient use of the eyes as a result of the regular progression of fixations seen on the screen. This constant, rhythmic advance, from phrase to phrase or line to line tends to become ingrained in the student after a time. Further, since the chance of regressing is entirely eliminated during a reading training film, the student tends to develop the habit of reading continuously, without unconsciously looking back and rereading material.

Reading films are the most highly disciplined approach to developmental reading instruction. The student must read what is before him, in a given time, and remember it. Research shows that the habit patterns that develop from continued work with reading training films do transfer to normal reading. Finally, reading films demonstrate, or "show how" to read, in a way that is not possible with any other medium. Students perceive material on a phrase-by-phrase basis, as they ought to perceive it in normal reading.

The equipment and material being utilized in this program were selected on the basis of a pilot study conducted during the 1964-65 school year. The results of that study indicated that, depending upon the ability of the student, increases in speed, comprehension and vocabulary ranged from 20% to 100% in a relatively short period of time. The teachers involved in the program this year and in the pilot study conducted last year are, quite enthusiastic over the degree of increase, particularly on the part of average ability students.

For example, results thus far this year indicate that in September, Section 8 A2, an above average section, was reading at an average rate of 250 words per minute and by November the class reading rate had increased to 374 words per minute representing almost a 50% increase. Section 8 C2, a below average section, was reading at an average rate of 130 words per minute in September and by November the average reading rate had been increased to 160 words per minute representing almost a 30% increase.

It should be noted that this program is supplemental to the reading program in grades 7 through 12 and that the results of all eighth grade students and all eleventh grade students will be further tabulated and analyzed at the close of the 1965-66 school year.

LYCOMING COUNTY TEACHERS PREPARE ELEMENTARY CURRICULUM GUIDE

By Mr. Albert K. Sundberg,

Assistant Superintendent, Lycoming County Schools.

The elementary teachers of Lycoming County have prepared an *Elementary Curriculum Guide* as one of a series of steps to improve content material and to aid teachers of elementary subjects. This guide is an attempt to establish the minimum subject fields, time allotments, and grade placement of subjects mandated by law or regulations.

Each elementary teacher in the County was solicited for information and advice at some time during the preparation of the guide. In addition, the County School Board and the boards of the seven school districts supported this project with their encouragement and funds. The project was directed by a steering committee headed by Mr. Robert Lesher of the South Williamsport Area Schools.

The materials contained in the guide are minimums. They are supplied for the following reasons:

1. To establish a guide of minimum understandings, skills, and attitudes that all pupils in Lycoming County should have.

2. To furnish a mutually agreeable firm base upon which each of the several school systems should enlarge.

3. To establish consistency and continuity, from grade to grade, subject to subject without "gaps" or "overlaps."

4. To ease the transfer of students among the several school systems.

5. To present to each new teacher a basic outline of teaching responsibilities.

6. To make available a basic outline that teachers can show to parents.

7. To place before each teacher, not only the material but also a provision to edit the same.

A copy of the Elementary Curriculum Guide, 1964-65, Lycoming County Schools has been forwarded to the Curriculum Library at Lock Haven State College for distribution among schools in Area Six.

AREA SCHOOLS REPORT ON ETV

The *Circulator* invites schools to report on curriculum activities in general, and on the use of instructional media, in particular. This month a number of schools in Area Six have reported their use of and involvement in educational television. We are pleased to include excerpts from these reports in this issue of the *Circulator*. Also, we want to encourage other schools to let us know about their television activities and other developments that would be of interest to other schools.

Bellefonte Elementary School — Centre County

Bellefonte Elementary uses channels WPSX-TV and WJAC-TV. A total of 734 pupils, grades 1-6, including special education pupils, view ETV. Twenty-seven teachers utilize television as a teaching aid in the following programs: science, literature, social studies, Spanish and physical fitness.

Blue Ball Elementary School — Clearfield County

Three teachers in the Blue Ball school make use of five ETV programs broadcast by WPSX-TV. Their overall evaluation of the TV programs is that it serves as an effective supplement to the education of the eighty-nine pupils, grades 4, 5, and 6 who participate. Programs utilized at Blue Ball include: "Music for You," "Learning our Language," "Children of Other Lands," "Exploring With Science," "Places in the News."

Curwensville Joint School System — Clearfield County

Grades one through six in the Curwensville system utilize ETV. Sixteen teachers report their involvement in television programs including Spanish, science, Better Speech, Pennsylvania History, English & Mathematics. Mr. Galen Bloom, of the Penn-Grampian school comments that ". . . the better speech program is very helpful to our children with speech problems."

McGhee Elementary - Lock Haven Area Jointure — Clinton County

Mr. R. H. Emery, Principal, reports that all grades, kindergarten through grade six, are making use of ETV as programmed by WPSX. A total of 422 pupils taught by thirteen teachers participate in television teaching and learning. They use TV primarily as a source of enrichment for their respective programs.

Penns Valley Area School District — Centre County

Elementary principal James R. Frye notes that a most significant characteristic of the six WPSX ETV programs currently used by the teachers at Penns Valley, is the attention-holding power television has for elementary pupils. "Better Speech," "Children's Literature," "Science Land," "Music," "Exploring Science," and "Places in the News" are given high ratings by the teachers.

Southern Huntingdon County Elementary Schools — Huntingdon County

In the Shade Gap, Rockhill, and Trough Creek Valley schools, ETV is used extensively. The Spring Farms school is temporarily without TV reception but will soon have a new antenna tower which will permit TV viewing. Approximately 653 pupils and 23 teachers are using a variety of WPSX programs. Elementary Principal, Henry L. Long summarizes the attitude of the teachers toward ETV as very positive; he adds ". . . the teachers think the quality of the programs are excellent."

Taylor Elementary School — Blair County

Taylor Elementary uses a variety of programs for its pupils, utilizing WPSX, WFBG, and WJAC. Mr. James Payne, Head Teacher, notes the enthusiasm generated by the programs "Current Events," and the increased motivation among children to read newspapers and magazines. The "Childrens Literature" program also receives laudatory reviews from the teachers who use it.

Tyrone Area Elementary Schools — Blair County

Dr. Edwin Hasson, Elementary Administrator, reports that the Tyrone Elementary schools are using WPSX, WFBG, and WJAC. Utilizing a wide variety of programs, 2,863 pupils taught by 119 teachers are taking advantage of the ETV medium.

Wallaceton-Boggs Elementary — Clearfield County

Grades three, through six at Wallaceton view four programs broadcast by WPSX. Mrs. G. Lockett uses "Learning Our Language," "Children of Other Lands," and "Music for You" to enrich her third and fourth grade pupils. Mr. Kenneth R. Lingenfelter feels his use of the "Places In The News" program makes a worthwhile contribution to his fifth and sixth grade classes.

West Branch Area High School — Clearfield County

Mr. Burdett Larson, Principal of West Branch, has assisted his teachers in utilizing ETV at every grade level, seven through twelve. A variety of programs are viewed, primarily for their enrichment value. Six teachers are currently involved in this new venture with WPSX-TV.

West Snyder High School — Snyder County

West Snyder is currently using Channel 33, Hershey, to provide enrichment for special education pupils. Mr. Norman E. Kline, Principal, reports that 24 pupils, taught by Mrs. Jean Weller, are participating in the program. The teacher feels ETV does help make learning more meaningful for slower learners, but that more should be programmed for this group of learners.

Akeley Laboratory School — Lock Haven State College

The Akeley Laboratory School faculty at Lock Haven State College is actively using the educational television programs transmitted by WPSX-TV. Miss Marcella Stickler, Associate Professor and Supervising Teacher in Akeley School, reports that her class of 24 pupils views the programs "Literature for Primary Grades," "Children of Other Lands," "For Better Speech," "Learning Our Language," "Scienceland," and "Holas Niños" once a week. The students are assigned to the classroom on a non-graded basis and have a chronological age range from six to nine years.

Miss Stickler finds that she becomes a team-teacher with the television instructor. In preparation for the TV programs Miss Stickler introduces each lesson, but the major motivation is provided by the skillful TV teacher. Although ETV is considered a passive activity, the students are usually actively engaged with the TV teacher, and are frequently stimulated to the extent that they continue a TV inspired activity at home. As an example, after the literature program the books which were reviewed are very much in demand. To insure effective follow-up, comprehensive notes about each lesson are recorded by Miss Stickler and the student teachers.

Miss Stickler is impressed with the TV programs because they are very carefully planned and produced, and effectively supplement and enrich the classroom activities. Particular benefits have been a noticeable improvement of the students' vocabulary, and an increased awareness of their environment. The programs have also been beneficial as an inservice training device for student teachers, and have helped Miss Stickler expand and improve her own lessons.

Miss Stickler and her class prepare for ETV lesson.

Lock Haven Senior High School, Lock Haven Area Jointure — Clinton County

Lock Haven Senior High School teachers are using three of the educational television programs transmitted by WPSX. The time schedule of the high school was changed to conform to the station's broadcast schedule to make these programs available. Mr. David H. Johnson is using the "Electronics" program twice a week with one of his general science classes which is composed of thirty-five tenth, eleventh, and twelfth grade students. Mrs. Caryl A. Young and Mrs. Emma B. Schrot are very impressed with the literature program, "Franklin to Frost," and each are using it with one of their eleventh grade classes. Mr. Frank Sente and Mr. Alva N. Smith are using the "Biology" program on a selective basis with one of their tenth grade classes. Mr. Smith is integrating the American Institute Biology Science program with the classroom textbook, and using supplemental materials and assigned collateral readings. Mr. Sente is using the program to supplement and reinforce the course of study, and selects particular programs of the biology series to introduce various concepts or units.

Mr. Alva N. Smith and Mr. Frank Sente, left to right, and their students at Lock Haven Senior High School are engaged in viewing the A.I.B.S. biology television program.

LOCK HAVEN STATE COLLEGE DIVISION OF TEACHER EDUCATION PLANS FOR ETV

Dr. Irene Russell, Dean, Division of Teacher Education, provided the leadership and coordination which made possible the planning program reported below.

As a result of an intensive study of its programs of pre-service education, the Teacher Education Division, Lock Haven State College, has recently made several important changes in course sequence and content. Of perhaps even greater significance, the study led to the planning of several future projects which will, when utilized, effect major changes in the methods of instruction utilized by the Division and add a new dimension to the Division's effort in educational research and development. These projects include the acquisition of a closed circuit television system and the development of a learning research center, both on the campus of Lock Haven State College.

The rising college enrollment in teacher education has made it virtually impossible for all prospective elementary teachers to have direct experience with children in the campus laboratory school. It is felt that the installation of closed circuit television will expand the opportunities for student-teacher observation and analysis of teaching and learning in the campus school.

Further uses of the television system will include videotaped lessons of superior learning situations in the various areas of the secondary curriculum filmed in public school classrooms and utilized at the college by teams of instructors working with prospective teachers. Also, it was recognized by the study group that college students working with instructors using this new medium would be better prepared to use such facilities when they become teachers in the public schools.

After a careful analysis of data and other materials relative to closed circuit television, and visitations to schools and universities who already have television followed by conferences with consulting engineers and ETV people in the Department of Public Instruction, the study committee recommended a budget program to the President of the College. The program, costing $81,600.00, has been included in the college budget for 1966-67; this item has received favorable action at the college budget hearing in the Department of Public Instruction.

With the introduction and use of this important medium of communication, the study and research requisite to effective teacher preparation will be greatly enhanced. The acquisition and development of a learning research center should follow as an outgrowth of the Division's plans for continuous growth and improvement.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF PUBLIC INSTRUCTION
LOCK HAVEN STATE COLLEGE
Lock Haven, Pennsylvania 17745

U. S. POSTAGE
PAID
Permit No. 92
Lock Haven, Pa.

Aids and Ideas

A STRUCTURED PROGRAM FOR TEACHING MUSIC

The materials in Silver Burdett Companies' music program — appealing songs, integrated listening selections, poems and folk stories, illustrations that teach — are so arranged that the child continually makes interrelated discoveries about music.

Included in their books and recordings are songs for rhythmic activities and the use of classroom instruments, songs to stimulate creative work, and folk, ethnic, art, foreign-language, holiday, and special-occasion songs.

The listening selections of their program offer a cross-section of musical styles, a broad representation of major composers, a survey of musical forms, illustrative music concepts, and enjoyable listening within the attention-span of the young child. During the school year the listening selections are played at various times so that pupils may learn different things about a single piece of music.

Everything one needs is included in a single record package for each grade. All songs and all integrated listening selections are recorded. Two other fine features distinguish these recordings:

(1) For each grade: Dr. Otto Luening has recorded two special lessons dealing with important music concepts.

(2) For Grades 3-6: Ten contemporary composers — Samuel Barber, Carlos Chávez, Aaron Copland, Henry Cowell, Paul Creston, Norman Dello Joio, Otto Luening, Richard Rodgers, William Schuman, and Igor Stravinsky — have recorded discussions of their music expressly for the benefit of the pupils.

For further information, write to:
The Silver Burdett Company
Morristown, New Jersey

ENRICHMENT RECORDINGS

Scholastic is now the exclusive educational distributor for Folkway Records. More than 1,000 enrichment recordings (33⅓ rpm long playing) are offered by Folkways — the world's largest library of authentic folk music and songs, and one of the largest in the field of the spoken word.

Whether you teach at the elementary, secondary, or college level there is a wide variety of records in language arts, social studies, science, foreign languages, and music appreciation to choose from to enrich your class program. Instruction booklets accompany each album, and include the texts, scripts, descriptive notes, discussion questions, etc. for your use.

These records are eligible for purchase under the provisions of N.D.E.A. at educational discount prices. For more information write to: Folkways/Scholastic Records, 900 Sylvan Avenue, Englewood Cliffs, New Jersey 07632.

"PROJECT TEACHER"

Just a reminder of the in-service program, *Project Teacher* shown on WPSX-TV, 3:30 P.M. each Wednesday.

January 5: Modern Mathematics — Content
Dr. Clyde G. Corle, Associate Professor, Education, Penn State

January 12: Modern Mathematics — Method
Dr. Clyde G. Corle, Associate Professor, Education, Penn State

January 19: Current Developments in Art Education
Dr. Edward L. Mattil, Head, Department of Art Education, Penn State; Dr. Alice Swartz, Associate Professor, Education, Penn State

January 26: Trends in Elementary Music Education
Dr. Paul Campbell, Associate Professor, Music Education, Penn State
Dr. John Fosse, Assistant Professor, Music Education, Penn State
Dr. Russell P. Getz, Coordinator of the Fine Arts, Department of Public Instruction

VOLUME II, NO. 5

FEBRUARY, 1966

THE CIRCULATOR

AREA 6 CURRICULUM CENTER / LOCK HAVEN STATE COLLEGE / LOCK HAVEN, PENNSYLVANIA

AREA SIX COORDINATOR: C. H. LARSON

EDITOR: E. M. NUSS, D.Ed.

From the Editor

Ever since Sidney L. Pressey devised and exhibited the first teaching machine in 1925, controversy has raged over the role of programmed instruction in public education. Arguments have ranged from the view that programmed instruction reduces the learner to an automaton and will eventually destroy all humanistic values to the promise that programming will relieve the learner from the "deadness" of education and introduce the highest respect for the individual.

During the past several years research on programmed learning has expanded rapidly; however, many questions remain unanswered, and the utilization of learning programs in the public school classrooms has moved at little more (or less) than a snail's pace. We suggest there exists a considerable need for educators to learn about programmed learning, and to test the merits of this approach on a more extensive and varied basis than is now the case. This issue of the *Circulator* is, in part, designed to aid the teacher and administrator who want to know more about programmed learning and learning materials.

Our service is basically referent in nature, and we make no effort to "sell" *any* view except the basic premise upon which this publication rests, namely; that the selection of instructional media and methods is the responsibility of the professional educator — the well-informed educator, that is.

There are many articles and books written on programmed instruction. We include here reference to only a few, which we have reviewed and believe will be helpful.

Programmed Instruction — Produced and distributed by the Fund for the Advancement of Education, June 1964. Available without cost from the office of The Fund for the Advancement of Education, 407 Madison Avenue, New York, New York 10022.

This excellent publication is a *must* for those who want to catch up on the history of programmed instruction and who wish to consider a projected view of its potential. Four case studies are included which illustrate actual programmed instruction projects at elementary and secondary grade levels, in a variety of subject matter areas.

Programmed Learning and the Educational Process — Edited by Annice L. Mills, published by the Thomas Alva Edison Foundation, 1961. Available through the Pennsylvania School Study Council or directly from the Thomas Alva Edison Foundation, 8 West 40th Street, New York 18, New York.

This booklet is a summary of a conference held by The Thomas Alva Edison Foundation and Grolier Incorporated held at the Center for Advanced Study in the Behavioral Sciences, Stanford, California, 1960. Chaired by Ralph W. Tyler, the conference explored every major concern relative to programmed instruction. It also raises many questions of utmost significance to teachers. A very readable and useful introduction to programmed learning.

Selection and Use of Programmed Materials — Published by the Division of Audiovisual Instructional Service, NEA, 1964. Available from National Education Association, 1201 Sixteenth Street, N.W. Washington, D.C. 20036. Single copy, 50¢; less for quantity orders.

This publication is offered as a handbook for teachers and is the most practical set of guidelines for getting started with programmed instruction we have yet reviewed. A film strip is correlated with the booklet and the combination should serve well as in-service training materials. A selected bibliography of materials is listed for further reading.

The "Professional Reprints in Education" a series from the College Division of Charles E. Merrill Books, Inc. offers several articles on programmed instruction. These may be purchased from: Charles E. Merrill Books, 1300 Alum Creek Drive, Columbus, Ohio 43216. The cost is 25¢ per copy. The reprints cited below are very thought-provoking in that they present divergent views of programmed learning and the theories upon which programming is based. Four titles of particular relevance here are:

"Basic Unresolved Teaching-Machine Problems" — Pressey. Reprint No. 8828.

"Teaching Machines: Threats and Promise" — Broudy. Reprint No. 8825.

"The Concept, Characteristics, and Use of Discovery Materials in Teaching" — Thelen. Reprint No. 8822.

"The Changing Face of Programmed Instruction" — Popham. Reprint No. 8810.

These materials will make a worthy addition to any school's professional library; and, if read, will assist educators in their sometimes seemingly hopeless struggle to keep informed on developments in education today.

In conclusion, it may not yet be possible to assess with reliability the potential contribution of programmed instruction to learning. However, it is ultimately the responsibility of the profession to make this assessment. Adequate knowledge and openmindedness are absolute prerequisites to the challenging task.

Instructional Media
(New Ideas, Methods, Research)

PROGRAMMED INSTRUCTION

By Dr. Hugh M. Shafer

Associate Professor of Education, Graduate School of Education, University of Pennsylvania.

Programmed learning or auto-instruction is a movement worthy of note by persons engaged in teaching. Unfortunately the movement is often referred to erroneously as "teaching machines." Programmed instruction represents one of the latest in a long line of attempts at improving learning through the individualization of instruction. As such it has a long root system with several branches. The branches draw on the contributions of philosophers, educational theorists, pedagogues, psychologists, directors of training and the learners themselves.

The long tap-root readily traceable in the development of programmed instruction is the influence of Socrates, an ancient Greek, who used a unique type of question asking as a method of teaching. Less distinct, and frequently overlooked in this connection is the work of Rousseau, Herbart, Froebel, Pestalozzi, Comenius and Dewey, to mention only a few. These scholars stressed the need for pupils to gain experience thereby making it possible for them to interact meaningfully with the materials of instruction. However, Mme. Maria Montessori, an Italian educator, is credited with the first systematic attempt to implement the emerging concepts of learning in a mechanism which she introduced in her "Children's House" School, in a tenement section of Rome, in 1907. Montessori believed that a child will teach himself from birth onwards, if given the proper environment.

In 1915, Sidney L. Pressey, a psychologist at Ohio State University, began experimenting with self-scoring testing devices. By 1924, he displayed a mechanism that encouraged continuous active response by the student in answering questions. The machine provided immediate advice regarding the accuracy of the student's response and made it possible for the student to proceed at his own individual rate. Forty years passed, but the element of self-tutoring through systematically arranged learning experiences remained a basic element in the programmed instruction movement which B. F. Skinner, a Harvard University Psychologist, stimulated in 1954 by a published paper entitled "The Science of Learning and the Art of Teaching."

At about the same time, or slightly before, training directors at Hughes Aircraft in California were experimenting with a "tab" method of trouble shooting in the industry. The technique contained the self-tutoring idea because the teaching method was a built-in feature of the total procedure. After responding to a written challenge or problem situation the learner would tear off a tab thereby revealing the correct response or solution.

Skinner's paper was quite timely. Technology was beginning to influence educational practice. Change had become characteristic of the era. Quality education had become a slogan for action. Both population and the amount of man's knowledge were exploding and a revolution in communications was in the making.

For these reasons phenomenal developments have characterized programming efforts during the ten-year period (1954-64) thereby justifying its being called a movement. Approximately 1,000 programs were written for use in schools during this short period, with twice that number for business, industry, government and various branches of the military. Except for computer aided teaching systems and training simulators, teaching machines as first developed have passed their zenith in popularity. However, they still hold a place of significance in controlled research projects. In the meantime programmed books have gained in acceptability. The best current publication on available materials is *Programmed Learning, A Bibliography of Programs and Presentation Devices* by Carl H. Hendershot (1964 edition with quarterly supplements), the author, Bay City, Michigan. It contains program titles at all grade levels and in most categories of subject matter taught in the schools. Included are titles in medicine and science which should be of interest to nurses.

A variety of programming techniques have been explored. Robert F. Mager, an industrial psychologist, has suggested starting with a clear statement of teaching objectives in terms of how the learners will behave after having interacted with the program. Skinner first proposed dividing the subject matter into small learning steps that successively approximate the desired behavior. Learners are to interact overtly by constructing appropriate responses. Norman L. Crowder, another industrial psychologist, proposed that longer more difficult portions of material be presented to the learner with the challenge of selecting from a group of multiple-choice options the correct response. Thomas Gilbert, another psychologist, is credited with the introduction of "Mathetics," a method of back-

ward chaining for animal training, including humans, where motivation is kept in the foreground of each related or chained activity. This approach seems to hold considerable promise as a method for teaching slow learners. More recently a combination of programming techniques involving all of these and some newer machine techniques has resulted in what is called the "adaptive" method. As such the format or writing technique is changed throughout the program depending on the nature of the material, the learners, and the terminal objectives sought.

Teachers and training directors can learn to program their own materials. Although it is a long and tedious undertaking, it is extremely rewarding in terms of professional satisfaction. Commercially prepared programs are more difficult to appraise, from off the shelf, than are textbooks. Actually one needs to have one to three students from the intended class or target population interact with each part or frame of the program in order to know what it will do in promoting learning. Good field-test data should accompany the program. It is felt that if 90% of the pupils in the intended population fail to score 90% on the program it is faulty and needs revision. This is a much higher standard of communication excellency than is required of most textbooks used in the schools. Feedback from students in the developmental testing study or early stages of the programmed material leads to a second and third revision of all good programs before they are published.

One of the big problems currently is, how best to use the programs that are available. Numerous uninformed persons expect programmed materials to stand on their own and absolutely teach. Although in the absence of a teacher some learning does result from using programmed materials, they work best when augmented with other teaching aids and techniques. In this manner, Programmed Instruction materials are similar to instructional films or any other currently used teaching tools including textbooks.

In 1961 The National Society for Programmed Instruction was formed with headquarters at Trinity University in San Antonio, Texas. By 1965, 22 field chapters had affiliated with the national office, two of which are in foreign countries. Membership in the National Society numbered just short of 2,000 by the third annual convention which met in Philadelphia in May, 1965.

What are some of the claimed advantages of programmed instruction?

1. It results in learning where all other methods tried have failed.
2. It utilizes the abilities of teachers more efficiently than is usually the case.
3. It serves as an excellent research tool.
4. It is economical in the amount of time required for learning.
5. It broadens otherwise restricted school curricula.
6. It can help break the lockstep of conventional scheduling.
7. Its use encourages teachers and pupils towards self-improvement.
8. It challenges earlier opinions regarding such things as I.Q., grade placement, school marks and pupils' progress through the curriculum.
9. It combines the efforts of many workers and scholars focusing their efforts on a common objective.
10. It also improves textbooks and other materials of instruction by encouraging research through learner-feedback.
11. It helps make education available to more of the world's population — some of whom have been previously deprived.
12. Numerous good programs are now available and can be used successfully, in part or as a whole, without the need for expensive machines often referred to as the hardware of programming.

What are some of the claimed disadvantages?

1. Programming is too monotonous for fast learners.
2. Programs are time consuming and expensive to write.
3. P. I. will not work in my situation or schedule.
4. It makes robots of teachers and pupils.
5. Only facts can be taught by programmed instruction.
6. It encourages cheating.
7. Teachers and pupils do not like it.
8. Many of the programs now on the market are worthless.
9. Teaching machines are an added expense and funds are already scarce.
10. Teachers do not know how the use the materials.
11. Teachers are afraid that programmed instruction will cause them to be replaced.
12. There are already too many "gadgets" in teaching.

Therefore, in the short period of ten years programmed instruction has attracted phenomenal attention. It has demonstrated a measure of durability having withstood numerous attacks. It is an approach to teaching that really results in learning. It still has numerous faults. It has not yet reached its potential. Let us hope that it continues to improve without becoming excessively formal or pedestrian.

TMI GROLIER OFFERS VARIETY OF PROGRAMMED INSTRUCTION

Teaching Machines, Incorporated, an affiliation of Grolier, Inc., has developed programmed instruction materials for most subject matter areas. This firm produces the MIN/MAX Teaching Machine and programmed textbooks. All programs by TMI are available in both the machine and textbook forms.

The TMI-Grolier MIN/MAX III Teaching Machine.

At present, TMI Grolier offers nine different self-tutoring programs. Before release each program is planned by curriculum experts and is student-tested. It is then revised and approved by staff psychologists, programming experts, and educational consultants.

The MIN/MAX teaching machine is simply a device used to convey information, using a new technique called programmed instruction. The primary features of programmed instruction are 1) learning proceeds in small steps, 2) the learner must actively participate, 3) there is immediate confirmation of the learner's response, 4) errors by the learner are pointed out and 5) the learner paces his own rate of learning.

Operation of the MIN/MAX involves the following steps: 1) place the program sheets in the loading tray of the machine; close the cover, 2) turn the knob to bring the first question sequence into viewing position and write the answer to the first question, 3) turn the knob to check whether your answer is correct and 4) turn the knob again for the next question sequence.

Pupils using the MIN/MAX Teaching Machine.

Research studies using TMI materials show successful, sometimes spectacular results. Several research abstracts are included below.

Abstract No. 1:

Ten pairs of sixth-grade students (that is, twenty students) were pre-tested with the Los Angeles Diagnostic Test Form 1. The underlying concept here involved "team learning:" students, paired according to sex and general scholastic ability, working together. After pretesting, students were given the TMI-Grolier *Decimals* program and worked for 30 minutes per day, five days a week for two months. On completion, nine of the ten pairs were re-tested. The average gain for the entire group was almost a full year (.9) and the best gain was 2.5 years.

Abstract No. 2:

This was a controlled experiment of two classes of 30 students each, selected from a cross section of ability levels of sixth-grade students, the groupings based on the Stanford Achievement Tests in Reading, Form JM, and the California Short Form of Mental Maturity. During a 12-week period involving two 6-week grading periods, Group A was given the TMI-Grolier Spelling program and Group B was taught conventionally with the Madden and Carlson Spelling textbook. Words selected for tests were chosen at random from the 1000 most frequently used words, checked with the Iowa Spelling Scale for "typical difficulty." Group A students scored higher gains after eight weeks of study than the conventionally-taught class after twelve weeks of study. Programmed Learning saved time for above-average students and eliminated the problem of loss of instruction resulting from illness as well as the problem of how to work a new student into the class.

Abstract No. 3:

This was an interesting teaching experiment at Lourdes High School, New Mexico, in which, using TMI-Grolier programs, classes in both Algebra and Electricity were taught simultaneously. The instructor, serving as a supervisor, was able to speed up understanding and progress, while he taught both courses concurrently without strain. The flexibility of the programs made it possible to vary the complexity of a line of study in dealing with an exceptional student. A particular student covered almost three times as much ground as other students. Each student was taught at his own level on an individual basis without concern about the level of progress of the other students. The instructor, to a great degree, became a private tutor. There was an exceptional increase in general enthusiasm noted in the classroom.

Abstract No. 4:

In the Mathematics Department of Central High School, Chattanooga, Tennessee, programmed materi-

als were initiated in the teaching of first year algebra, second semester, to 33 ninth grade students. The class was composed of those whose first semester achievement had been most unsatisfactory. Thirty succeeded in completing one year of algebra. Twenty of this number are continuing their study of mathematics and are completing Algebra II. Before programmed instruction was inaugurated, these students planned to drop the study of any mathematics higher than ninth grade arithmetic.

Programs are available from TMI-Grolier in General Science, Shorthand, Spanish, Elementary Arithmetic, French, Intermediate Mathematics, Secondary Mathematics, Statistics, Music (Fundamentals), Secondary Science, Modern English (Spelling — third grade and Punctuation for seventh grade and up), German, Russian, and Hebrew.

For complete information on Groiler programmed materials write to: Teaching Materials Corporation, 575 Lexington Avenue, New York 22, New York.

AN ELECTRONIC CLASSROOM FOR LANGUAGE INSTRUCTION

The Edu-Tronics Electronic Classroom is the most effective means of making language laboratory facilities available to the greatest number of students. A relatively new concept, it is already being used in several hundred classrooms throughout the United States as more and more foreign language instructors and school administrators become aware of its merit.

Designed to provide the frequent periods of intensive drill required by modern audiolingual teaching techniques, it is part of the language classroom itself, and is therefore always available for such drill. Language instructors can change from their own teaching to recorded drills and exercises without changing classrooms. Students can learn more efficiently since there is no time lapse between teacher instruction and its reinforcement by means of recorded drill.

The Edu-Tronics approach is based on the following principles of learning and educational aims:

1) That the primary goal of language is communication and that therefore, hearing and speaking skills are basic and come first in time and importance.

2) That good grammar habits are first learned through pattern practice and analogy, rather than through analysis and explanation.

3) That the reading and writing skills are learned and used to greatest effect if they are solidly based on the hearing and speaking skills.

4) That the hearing and speaking skills are developed by presenting a small amount of authentic material, drilling it until it is mastered and practicing its manipulation to achieve even greater freedom in the use of its structure and vocabulary.

The Edu-Tronics console, with students using the headset-microphone combination.

Electronic technology is utilized to make possible a language learning environment in which these objectives are recognized. The Edu-Tronics classroom consists of a console, student headset-microphone combinations and a custom-built permanently mounted cable on which student stations are located. This arrangement is designed to eliminate many of the high costs usually associated with the typical language laboratory; indeed any regular classroom can now be used as a language laboratory. By greatly reducing the costs of language instruction, *more* students are able to have increased experience in using the language they are studying.

In summary the Edu-Tronics Classroom provides the following administrative advantages:

1) *Any Classroom a Language Laboratory.* Edu-Tronics eliminates the problem of providing a separate room for language laboratory facilities.

2) *Economy.* The Edu-Tronics Electronic Classroom costs approximately fifty to seventy-five percent less than the conventional language laboratory. This savings is compounded to that which results from eliminating the need for separate laboratory facilities.

3) *Minimum Maintenance.*

a) The principle components of the Edu-Tronics Electronic Classroom are locked at the teacher's console when not in use.

b) The equipment has been specifically designed for rugged classroom use.

c) Technological advances of the Space Age, such as those found in the Minuteman ICBM have been employed.

4) *Availability For Use In Other Subjects.* The mobile Edu-Tronics equipment is available for ex-

perimentation in other areas of instruction, such as speech therapy, music, stenography, and whenever audio programming is useful.

5) *An Advantage for Accreditation.* Edu-Tronics installations are cause for commendation by college accrediting institutions. In a recent survey of seventy-two colleges, eighty-three per cent of them considered high school background in the use of laboratory equipment to be a distinct advantage.

6) *Equality of Opportunity For Students.* The economy of the Edu-Tronics equipment makes possible multiple installations of Electronic Classrooms.

Elementary pupils using the Edu-Tronics System.

A classroom teacher using the Edu-Tronics Headset - Microphone Combination.

For additional information, more detailed specifications or a demonstration by a local Edu-Tronics Representative, please write or call: Edu-Tronics Incorporated, 459 Broadway, Hicksville, New York.

DIAL-SELECT LANGUAGE LABORATORIES MEET GROWING DEMAND AT PENN STATE UNIVERSITY

By Dr. W. LaMarr Kopp

Assistant Professor of German and Director of Language Laboratories at the Pennsylvania State University.

At the Pennsylvania State University the Language Laboratories are designed to meet the needs and provide the services for language programs offered by a number of departments within the institution. Each of the departments requires its own recorded programs and its own unique arrangements for use of the laboratories in order to integrate the laboratory with the language instructional programs it has established. The diversities of the various basic language programs makes the administration of the Language Laboratories quite complex.

The complexity derives not only from the diversities of the various basic language programs. It stems, too, from the constantly growing numbers of students enrolled in language courses using the language labs, as well as from the number of "new" programs developing an interest in the use of language lab facilities.

Currently at Penn State approximately 2500 students are enrolled in some two dozen courses which require the use of language lab facilities for two, three, or more times per week. This means that the language lab program must accommodate around 6000 to 8000 visits per week. A program of such magnitude was hardly imagined just a few years ago.

The Language Laboratories at Penn State had a humble beginning. The first lab consisted of some twelve tape recorders equipped with multiple headsets and attached to rows of long tables in a basement classroom. This installation was quickly outgrown. In 1959 the Language Laboratories installed a 36-position lab that is still in use today and represents a rather typical lab installation. There is a console consisting of eight playback units from which master programs are sent out to individual rows of student booths. Two of the eight console units are also equipped with recording features in order to permit the recording of student responses by the teacher at the console from any of the 36 student positions. Each of the 36 student booths is equipped with an individual tape recorder, enabling the student to record the master program and his own responses and permitting him, by replaying, to compare the two.

In 1962 Penn State acquired the first unit of what is sometimes still referred to as an experimental lab with nothing more than a telephone dial in addition to the headphones and microphone in each booth. Today the university has three of these dial-select labs: two of them with 42 student booths and a third with 24 booths. Each of these dial-select labs is what has generally been called a passive lab, i.e., the student's activity is limited to a listen-repeat cycle and does not include a listen-repeat-record operation. Each of the dial-select labs also has a console from which the teacher can conduct a class employing the various exercises commonly associated with language instruction in the laboratory. This provides the possibility of scheduling an entire class together in the lab. In such a situation the instructor can teach from the console, either live, or with the use of recorded materials played from the console, or with the use of dial-access recorded material originating in a remote program library. At Penn State this scheduled class use of the labs, for the most part, is restricted to special experimental sections and advanced specialized classes.

Most of the 2500 students enrolled in classes requiring the use of the language lab are simply required to visit the lab a minimum of three times each week for a certain number of minutes as prescribed by the department. In contrast to a scheduled lab program,

this arrangement represents a rather strict application of the library-lab principle. Under the library-lab system presently in operation at Penn State, a student may attend the language lab any time the labs are open, so long as he fulfills the minimum requirements prescribed by the course in which he is enrolled. The labs which operate on the library system are generally open from 8:00 a.m. until 10:00 p.m. Monday through Friday and from 8:00 a.m. to 1:00 p.m. on Saturday. An attendance record is kept by requiring each student to sign his name and the exact hour on an attendance sheet every time he enters the lab and to list the time again when he leaves. At the end of each week these attendance records are forwarded to the student's instructor.

Such a lab system obviously requires tremendous flexibility. Firstly, it requires that every language program be available every minute the labs are open. It also means that at any given moment as many as one hundred or more different programs may be in use simultaneously. This kind of required flexibility is achieved, as mentioned before, by means of a dial-select type of installation. After a student has signed in with the attendant in charge, he sits in any vacant booth. From a telephone directory he notes the telephone number of the particular lesson he requires. He puts on his earphones, dials the number, adjusts the volume, and begins to work. When he has finished a unit, which may run anywhere from two to about fifteen minutes, he may hear the same unit again by waiting until the tape automatically rewinds and begins once more. If he wishes to proceed to the next unit or review one he practiced previously, he simply dials the appropriate telephone number. His practice in nearly every case will consist of listening to a model and repeating; the exercise never includes recording his responses.

The program which the student hears when he dials a given number originates in a remote program library located in a separate room. The library equipment consists of a bank of 30 tape-transport units each equipped with four quarter-track playback heads. In this way the thirty units provide a total capacity of 120 different programs. The switching logics system that operates these units through electrical dial impulses is essentially the same as that which operates through an ordinary home telephone when the user is connected to a recorded message.

The dial-select installation at Penn State presently consists of three separate labs with a total of 108 student booths. For specialized classes, the recording lab is available with an additional 36 booths. The recording lab is also wired to the remote program library so that certain select programs from the library may be made available as an overflow lab at certain hours when all booths in the library labs are occupied.

Presently plans for extensive expansion of the language labs are under study. Such plans include more than doubling the amount of student booths; they also include expanding the capacity of the remote program library from the present 120 to more than 350 simultaneous programs, making available via telephone certain language programs and even entire language courses which may not be sufficiently in demand to justify the formation of a class but which a few students with special purposes might study independently. Presently under way are explorations of the possibility of providing direct access to recorded language programs from phones in dormitory rooms by means of regular telephone service. The next logical step, of course, is to consider the possibilities of providing recorded language programs to the community in a kind of adult-education program. Of perhaps even greater interest would be the possibility of providing each of Penn State's Commonwealth Campuses as well as other institutions with a reasonably complete library of recorded language tapes by means of long-distance telephone service. But this remains, at the moment, merely a prospect for the future. For the present, the dial-select lab system has provided one answer to the complex problem of providing good language lab facilities for rapidly expanding student enrollments.

Dr. W. LaMarr Kopp, Director of Language Laboratories at The Pennsylvania State University, dials one of 120 different programs originating in the dial-access program library and directs it to selected student booths.

GIFTED STUDENT SCIENCE SEMINAR ON CHANNEL 3

Beginning February 10, WPSX-TV will offer a 15 program series for secondary school science teachers and students. The series is based on seminars held last summer at Penn State for gifted high school students. The TV programs are intended as enrichment for secondary pupils in general, and for adult viewing.

The programs are scheduled for 8 P.M. each Thursday. Additional information is available from: The AEBC, 201 Wagner Building, University Park, Pennsylvania 16802.

AIR FORCE AND INDUSTRY TEAM UP TO IMPROVE LEARNING

How will the aids teachers use in the not-too-distant future compare with those of today? Some startling changes are undoubtedly coming. Already teaching machines and programmed learning have opened new horizons, posed new questions for educators.

A glimpse at the direction of progress in this field is given by work on concepts such as "Modular Audiovisual Instructional Systems." This subject is discussed in the following article.

Graflex, Inc., (a subsidiary of General Precision Equipment Corporation), and the United States Air Force teamed up recently in an attempt to uncover some better answers to the problem of developing instructional equipment that could present integrated visual and sound instructional programs to students and also assess their learning.

The results of this investigation, jointly sponsored by Graflex and the Behavioral Sciences Laboratory of the Aerospoce Medical Research Laboratories, Aerospace Medical Division, Wright-Patterson Air Force Base, Ohio, demonstrate the feasibility of designing and producing Modular Audiovisiual Instruction Systems and provide physical data on the use of slides, filmstrips, and projection equipment never before compiled.

The Air Force is publishing the report in full and it will be available to educators, training directors, and others interested in new educational techniques.

Modular audiovisual systems are being studied as one of many programs being undertaken by the Air Force to improve teaching methods. The Air Force's interest in this field stems from the enormous training job faced by the armed services. The various branches of the service must train thousands of young men from all walks of life, many of whom have no training in the specialized jobs in which the Air Force must use them.

Modular systems show promise as an effective method for presenting specialized instructional material in which pictures and overt performance (as opposed to written language) dominate learning. The pictures are presented in a *programmed* sequence and are accompanied by careful verbal directions. This pattern of instruction eliminates the need to learn by reading and overcomes the greatest obstacle to effective learning faced by students whose skills in this area may be underdeveloped. Many students of average or above intelligence are hampered in formal schooling because of a void in early reading training or an absence ot reading aptitude.

Instructional programs dominated by pictures have already proven highly effective in reaching all types of students and are especially useful in developing specific job skills such as hand assembly and other mechanics. The technique is equally applicable to students who have adequate reading skills. Although it is not critical for their learning, it should prove to be a more efficient teaching technique for certain subjects.

Picture-dominated learning incorporates a mixture of sound and visual presentations to get across instructional material. For example, packaged programs of instruction might start off with a sound motion picture introducing the subject. This would be followed by slides or filmstrips accompanied by verbal instructions, from simple to more complex, to go over step by step the various parts of the task. This might be followed by a sound motion picture summary and perhaps preview of what will come next.

The material is presented at a pace suited to the learner who has the option of controlling the speed with which he goes through the lessons. He can repeat the instructions privately.

There are a number of ways of presenting a learning program like this. The most obvious is to use separate motion picture projectors, slide projectors, screens, and other equipment. The problem of synchronizing the devices in an automatic presentation causes some problems. The lack of versatility of this setup is its most serious drawback.

Another answer, and the one explored by Graflex and the Air Force, is to develop an autoinstructional system that can be assembled from basic modules. A modular system would allow greater versatility than now possible for presenting the instructional material in the different forms needed to meet specific learning requirements.

Graflex' study of modular systems delved into the various design factors affecting each of the basic modules that might be included in such a system:

slide
a family of screens
filmstrip
various light sources
sound recording and playback equipment
sequencing equipment
question and answer equipment

The study concluded that modular design of audiovisual systems if feasible; that such systems would provide greatest versatility, and would be especially valuable in conducting research, developing instructional programs, and providing for highly specialized individual instruction.

Requests for copies of the reports numbered AMRL-TR-65-78, AMRL-TR-65-79, and AMRL-TR-65-80 should be directed to either of the addresses listed below, as applicable:

Federal Government agencies and their contractors registered with Defense Documentation Centers (DDC): DDC, Cameron Station, Alexandria, Virginia 22314. Non-DDC users (stock quantities are available for sale from): Chief, Input Section, Clearinghouse for Federal Scientific & Technical Information (CFSTI), Sills Building, 5285 Port Royal Road, Springfield, Virginia 22151.

STUDENT LEARNING STRENGTHENED THROUGH INDEPENDENT STUDY LESSONS

There are numerous frustrations and difficulties that face many students in the typical classroom. Some well-known difficulties are the teacher who goes too fast; the classroom atmosphere that does not encourage a question when a point is not clear; instruction missed because of illness; and breaks in the instructional sequence or changes in the entire content structure as a result of a move from one school to another.

The LSI programs, *Lessons for Self-Instruction in Basic Skills* published by California Test Bureau, Monterey, California, can help students in such difficulties. These lessons are short units of instruction prepared in the scrambled text format. Most lessons offer multiple responses for selection by the learner; other lessons require the learner to select a response from the context of the lesson. They are multi-level programs designed to supplement regular instruction, and each requires from one to three hours to properly complete.

The LSI authors realized that motivational stimulation is as important in programmed learning as in any other learning. Programmed instruction alone will probably not solve many of the learning difficulties encountered in the use of previous methods, and there is increasing awareness that the mere placing of a scrambled booklet, a linear program, or a teaching machine in front of a student does not make him want to learn any more than an ordinary textbook would make him want to learn. Therefore, student achievement is contingent upon elements outside the LSI program — the teacher and the student as an individual.

The experience of LSI's programmers with hundreds of students in individual tryouts of the lessons has corroborated the validity of the concept of self-pacing. This self-pacing has a twofold character. It can be thought of as the number of lessons that a student works in a given period of time — for example, twelve lessons. Self-pacing can also be thought of as the amount of time a student works with a program before he becomes tired, or loses interest, and therefore, desires to stop. It is important that teachers keep these two aspects of self-pacing in mind when directing and observing students. For some students, twenty minutes is the maximum time they can profitably apply themselves to a program. Beyond that, attention lags and the consequent mechanical working of the lessons results in little if any increase in knowledge. For other students, a fixed-time period for work with a booklet does not have harmful effects provided that they are permitted to work at the speed that is optimum for them.

If a group of students is directed to work with LSI lessons at the same time, the teacher should remember that some members should stop working before others. Booklets differ in the amount of application required and in their number of lessons. For students who can work for longer periods with sustained interest, a permissive attitude should be developed toward their moving ahead.

In this matter, as in so many others relating to the LSI booklets, individual observation and knowledge of the students by the teacher are most important. The teacher is urged to take note of individual differences in directing the use of programs and to arrange for a change of activity when the interest lags. Any program can be set aside to be taken up on another day.

LSI lessons should not be used as a steady scholastic diet. They are specialized aids and should not be conceived of as sufficient textual material for any student in any of the subject areas. They do not provide all the drill that most students need and they must be used as part of a larger program including discussion and other classroom techniques.

Studies have shown that programmed instruction teaches many skills and concepts. Programmed instruction usually takes less time than conventional methods to accomplish certain learning objectives. Two important advantages, therefore, are embodied in this type of presentation: efficiency, and the freeing of the teacher to work with individual students. The teacher who utilizes the LSI programs will find time to concentrate upon individual students and ways of better stimulating and motivating them. A professional climate more conducive to achieving appropriate goals for individual students is concomitant to this new medium.

Further information about LSI booklets may be secured by writing to: California Test Bureau, 206 Bridge Street, New Cumberland, Pennsylvania.

ITA MAKES SPECTACULAR GROWTH

As reported in a recent issue of *Education U.S.A.*, it is estimated *that 10% of the primary-age children in the country today are learning how to read using the Initial Teaching Alphabet.* In 1963, this 44-character alphabet, developed originally in Great Britain, was used with 500 children. This school year at least 70,000 students in 42 states are being introduced to ITA.

ITA research is as yet inconclusive; however, reports from schools using this unorthodox approach are generally favorable. ITA has been used successfully with groups ranging from highly intelligent first graders to adult illiterates taught at San Quentin (Calif.) State Prison.

The ITA movement in this country has centered at Lehigh University and in the Bethlehem, Pennsylvania public schools. An ITA Studies Center is located at Lehigh University; Albert J. Mazurkiewicz, director.

SPECIALIZED PROGRAMMING — A KEY TO ETV

By Robert C. Dudley

Producer/Director, the Division of Broadcasting, The Pennsylvania State University.

The educational television programmer likes to think of his program schedule as being similar to the well stocked library and he likes to encourage viewers to use the schedule of programs as the reader uses the library — to select from the full broadcast schedule those programs which he wishes to view and, hopefully, to think about and find additional educational resources related to what he has seen.

To offer the viewer a wide selection of programs for evening viewing, WPSX-TV, The Pennsylvania State University educational television station, draws upon the program resources of The Pennsylvania Department of Public Instruction (DPI), National Educational Television (NET), the Eastern Educational Network (EEN), the Educational Television Stations (ETS) division of the National Association of Educational Broadcasters, other individual ETV stations, and of course the resources and facilities of our own area and our own station.

N-E-T is a national "network" supplier of programs to over 100 ETV stations in the country. It provides five hours of new public affairs and cultural affairs programs each week.

The Eastern Educational Network, a program coordinating agency for 18 stations, provides such special series as *Repertoire Workshop, World Theatre,* and a program series on French cooking.

Programs produced by the Division of Broadcasting are in three categories: formal instruction, informal instruction, and community affairs.

Formal instructional programs include college courses which are offered for a credit through the Correspondence Study Department of Continuing Education, and in-school and in-service programs which are produced in cooperation with the Allegheny Educational Broadcast Council. A credit course in art history is now being offered, and two additional courses are in production. One of these is in elementary education and will be offered for graduate credit on an experimental basis beginning in February, 1966.

Informal instruction includes series which are offered in combination with other media and are similar to short courses or workshops which might be scheduled for adults. Series in this category include "Family Meals are for People," which was produced for the College of Home Economics; and "Improving the Home Grounds," which is being produced for the Colleges of Agriculture and Arts and Architecture.

Community affairs programs include "Pennsylvania Magazine," a weekly program about people, places, and things in Central Pennsylvania. Coal mine spoils reclamation, the dedication of the William Penn Museum and Archives, and the plans of the Clearfield Area Industrial Fund Compaign have been recent topics on the series. The Magazine also features a "Sketchbook" based on artist Joe Servello's impressions of Central Pennsylvania communities.

All of the programs in the evening schedule of WPSX-TV are of some interest to teachers and their students. We have found that many teachers are assigning students to watch certain programs in the evening schedule as supplementary assignments. For instance, some English teachers have asked their students to watch "The Age of Kings," which presents Shakespeare's five historical dramas in chronological order.

Any teacher could find in the evening schedule programs that would be of value to students if they were viewed as a part of regular school work.

So the program schedule of WPSX-TV, like the index of a good library, is varied. It is there for your educational use. It is there for the future of your community.

EDUCATIONAL DEVELOPMENTAL LABORATORIES OFFER PROMISING MATERIALS FOR IMPROVED LEARNING

The Educational Developmental Laboratories of Huntington, N. Y. is adapting modern technology to teaching and learning in a variety of ingenious and apparently effective ways. They have devised pro-

gram learning materials and equipment that add a new wrinkle to teaching, and, on the basis of reported research, enhance learning in a range of skill areas.

Educational Developmental Laboratories "Directions in Learning #1" is a program built upon the assumption that effective seeing skills are basic to successful learning, especially in the areas of word recognition and spelling. With the use of a unique tachistascopic program, students are assisted to become accurate and orderly in their seeing, rapid in their seeing, and stronger in visual memory. (For all grade levels.)

"Directions in Learning #4" utilizes recordings and correlated student workbooks to teach students how to listen more effectively and more critically and how to develop the thinking skills that underlie both listening and reading. (Grades 7-12)

Educational Developmental Laboratories "Scimming and Scanning Program" helps students to become versatile readers who can alter their approach to suit the purposes for which they are reading. Components of this program for high school students include a text containing materials that are typically skimmed and scanned in everyday situations ;a student workbook that introduces the techniques of skimming and scanning and provides systematic practice in both skills; the Educational Developmental Laboratories Skimmer, a device that helps the student pace himself as he reads.

The Educational Developmental Laboratories "Arithmetic Skills Program" is developed for elementary and secondary schools. This program involves the use of instrument techniques which present challenging timed exercises to help students develop proficiency in the seeing, thinking, and computations skills needed for success in arithmetic.

Other programs offered by Educational Developmental Laboratories include: "Controlled Reading Techniques," — (for all levels), "Study Skills Library," "Word Clues Series" — (grades 7-12), "Word Watching Spelling Program" — (grades 2-9, remedial for higher grades).

Educational Developmental Laboratories also publishes a reading newsletter which discusses in considerable detail the various aspects of reading programs and reports on research studies involving Educational Developmental Laboratories materials.

Teachers interested in receiving descriptive materials of Educational Developmental Laboratories Reading Newsletter should write to:

Educational Developmental Laboratories
Huntington, New York

FEDERAL RESERVE BANK MATERIALS AVAILABLE

A series of booklets which identifies and discusses important economic problems is produced and distributed by the Department of Bank Relations and Public Information, Federal Reserve Bank, Philadelphia. These materials are available — FREE — to teachers and may be obtained in quantity, enough for permanent distribution to students.

The booklets may be used as basic instructional materials, or as supplemental to a course of study or textbook. The style of the series is especially well suited for the problems-approach teaching method. The interest level will appeal to the less academically inclined student as well as the more able student; the reading level is appropriate for most senior high students. In each booklet various divergent views relative to the topic under discussion are presented without bias or propaganda.

One way in which the materials are being used is described by Mr. George MacKenzie, P.O.D. teacher in the Lock Haven High School. Mr. MacKenzie uses the "problems approach" in teaching economics to his senior students. His introduction to the course consists of raising and discussing with the class questions involving economics; here the primary aim is to create student interest in key economic problems. The next step involves the use of the booklets as sources of information essential to an understanding of the problem. Assignments are made which require the student to recommend problem solutions based on the reading he has done. Many students are motivated to seek additional information from a text or reference book; films and other sources of information are also used to bring new knowledge to the classroom. Student evaluation consists of essay questions that require the student to present and justify a solution to the economic problem under study.

These materials have "great appeal to students," according to Mr. MacKenzie, and "provide the teacher with a different and interesting approach to teaching economics." The contents stimulate thinking and are easily related to local economic problems and the personal concerns of Senior students. Each booklet may be used as a separate unit or "problem;" the series is taught in a period of time ranging from five to eight weeks.

The following titles are now in print: "The Price System," "The Mystery of Economic Growth," "The Balance of Payments," "Gold!," "Unemployment in Prosperity, Why?" "Automation" and "The New Poverty." Write to: The Federal Reserve Bank of Philadelphia, Publications Division, Philadelphia, Pennsylvania 19101. Ask for: The Series for Economic Education.

Area Six Schools
(Events, Projects, Views)

AUTOSCORE USED SUCCESSFULLY BY AKELEY TEACHER

Mr. William Schall, Assistant Professor of Education and teacher in the laboratory school on the Lock Haven State College Campus, makes available to his pupils the self-tutoring device known as Autoscore. Mr. Schall's interest in programmed learning led to a master's thesis in which he did experimental research with the TMI Grolier spelling materials. He has over the past five years used a variety of programmed materials in different subject areas. He is enthusiastic in his evaluation of programming for elementary pupils. The following article includes a description of Autoscore and Mr. Schall's comments about it.

The purpose of Autoscore is to teach material which depends, to a large extent, upon memory and practice after the ground work has been laid by the teacher. Such material includes arithmetic, spelling, geographic locations, historic dates, chemistry formulae, reading comprehension, laws of physics, grammar, punctuation, etc. The device is designed to stimulate interest in the pupil and to challenge him to improve himself by his own doing, thus freeing the teacher for imparting concepts and understanding.

Autoscore is a "teaching aid," smaller, lighter, and less expensive than a standard typewriter, and which serves as a private tutor to the student. On the face of the machine are two digital counters; one counter goes up by "one" every time a wrong answer is given, and one counter indicates the elapsed time in seconds. A stylus, shaped like a pencil, is connected to the machine by a flexible electrical lead. Question and answer cards are 8½" x 11", of high quality paper stock so that they can be used over and over again. Each card has 10 questions on it and each question has a choice of up to 5 answers.

Cards are inserted in the machine so that the answers line up with contact points in the machine. Holes in the top of the cards operate contacts which "set up" the machine to give a different answer pattern for each card. Thus, the answer to any particular question may be the first of the five choices on one card and the third on the next ,and so on.

Advantages of the Autoscore include:

1. Autoscore relieves the teacher of the major chore of correcting papers, thus leaving additional energy and enthusiasm for an improved teaching job.
2. Autoscore never gets tired, and therefore never allows a mistake to go uncorrected: nor does it lose its patience, becoming unnecessarily severe with the student. It treats all students the same.
3. Extra drill for the slow student is a simple matter of telling him to repeat certain question cards until he reaches the necessary proficiency. It does not disrupt the other students. It measures progress in terms of improvement over previous attempts, rather than causing discouragement and a sense of failure to the student who is always "low man."
4. Drill for all at the same level is unnecessary. Better students can be encouraged to progress into more challenging problems.
5. The three main reasons that Autoscore is a "teaching device" and not just a "testing device" are as follows:
   a. It provides a sequence of problems which are designed to take the learner from a low to a high level of proficiency in a given subject, in very small steps called "just noticeable differences."
   b. It requires some action by the learner at *every* stage of the program.
   c. It provides immediate knowledge of results about the correctness of the learner's responses. Autoscore refuses to accept a wrong answer and insists that the correct answer be produced before the next question is answered. In this manner, Autoscore performs like a private tutor.

In Mr. Schall's non-graded classroom, all children have the opportunity to use autoscore as a supplement to their basic math program, and nearly all do — with enthusiasm. Children of different ability levels find the machine fascinating. Pupils who tend to have difficulty with number operations are especially delighted with the success and progress this teaching aid makes possible for them. Often during, before and after school and lunch periods one finds pupils "on their own" waiting a turn to use one of the two machines in their classroom.

Pupils use Autoscore as private tutor.

It is important to note, Mr. Schall points out, that the Autoscore is a device which permits individualized self-instruction. The pupil proceeds at his own pace; very able children do not become bored, the slower learning child is not frustrated. Any child who needs strengthening in the use of basic number combinations can benefit from use of the Autoscore. Drill and practice are possible without the aid of the teacher; Mr. Schall finds this "freed" time extremely valuable as a time to work with pupils in developing concepts and with individuals who have any special problems.

Teachers who want to learn more about how Autoscore can be used in the classroom are invited to contact Mr. Schall, or for general information about this aid write to: Astra Corporation, 31 Church Street, New London, Connecticut.

BEN TEACHERS UTILIZE PROGRAMMED INSTRUCTION

In the Bald Eagle Nittany High School, Mill Hall, Clinton County, three teachers are currently using programmed instructional materials with their pupils. Mrs. Judith Bitner employs the Harcourt, Brace and World English 2200 Program in her 8th grade class; Mr. Bruce Bechdel uses the same type program in the 2600 and 3200 series with his senior groups; and Mr. Jerry Weigle adds as a part of his 7th grade Geography course of study a programmed unit produced by Coronet Instructional Films.

Mrs. Bitner is using the English 2200 series with one eighth grade class of thirty-four students. This section is a relatively homogeneous group of pupils at at the sixth and seventh grade achievement levels.

The 2200 series is used as the basic text which is supplemented with drill after each lesson and a literature program during the year. Each individual pupil proceeds through the lessons at his own rate; therefore, the teacher is free to "take care of individual differences" through individualized instruction.

These programmed learning materials, according to Mrs. Bitner, seem to be the "best approach for the slow learner" since he is "given self-confidence" through the lessons. The attitude of the students is also very favorable toward the program as they are aware of their achievement progress. The achievement of the students proceeds at a greater rate than it would if they were using a traditional program.

Because this type of program emphasizes individual differences, the teacher's need to give additional professional assistance to her students is emphasized.

Mrs. Bitner assists pupil using programmed materials.

Mr. Bechdel utilizes the 2600 series with a low ability class of 25 students on a group instruction basis, and the 3200 series with an average ability class of 25 students on an individual instruction basis. The programs are used as the basic text with both classes, and are alternated every other week with Literature.

The pupils prefer using these programmed lessons since they receive "more satisfaction of achievement than through the use of conventional materials." The individual achievement of each student is dependent upon "how conscientious he is in using the materials," although there seems to be more achieved by the classes with the use of programmed lessons.

Mr. Bechdel said, "Programmed learning materials have their place but are of limited use in the classroom They are best used as a thorough and quick review" of the lessons presented by the teacher. He also observed that the constant use of programmed materials is boring to the student and should be alternated with other types of teaching

Mr. Bechdel's class uses English programmed materials.

Approximately 100 7th graders make good use of a programmed unit in Mr. Weigle's classes. A three week unit, "Latitude and Longitude," is particularly helpful to average and less able students, according to this teacher.

The "Latitude and Longitude" unit is actually a textbook programmed to be used by the individual student who proceeds at his own pace. The student responds to questions and statements about the subject by writing his answers on a piece of paper; as he moves a panel in the book, he can learn immediately whether or not his response was correct. Thus

correct responses are "rewarded" and "reinforced" at once; incorrect responses are also immediately apparent and helpful information is provided the student to assist him in selecting the correct response.

Mr. Weigle gives individual help to pupil using programmed materials.

Mr. Weigle believes the programmed text is superior to the traditional text in that it permits individuals to work at their own speed and gives the teacher more time to work with students who need special help. He recognizes, too, that students are highly motivated to use such materials and gain self-confidence from the experience. Content in this particular unit is learned more readily and retained longer than when taught by more traditional methods.

The program is used as a basic approach to teaching the concepts of latitude and longitude. It is also used as supplemental material for students who have unusual difficulty with the subject matter. Mr. Weigle welcomes inquiries about his programmed unit. Teachers may get general information about this and other programmed materials by writing to: Coronet Instructional Films, Chicago, Illinois.

INDUSTRIAL ARTS ASSOCIATION OFFERS DIGEST OF AUTOMATION

The American Industrial Arts Association, Inc., (AIAA) has made available through NEA, an interesting and well-organized bulletin which can well serve as a primer on automation for all teachers — regardless of their subject matter area or grade level of teaching.

AUTOMATION: THE NEW INDUSTRIAL REVOLUTION points up that while the word "automation" is only about 15 years old, there is already much ambiguity associated with the use of the term. Meanings of automation are made specific by the bulletin. Other aspects and implication of automation are explored in the publication including the contribution of automation to science; financial considerations; economic consequences; political ramifications; international ramifications; educational challenge; and psy-

This very readable publication is available from AIAA, 1201 Sixteenth Street, N.W.; Washington, D.C. 20036 at 50¢ per copy. Payment must be sent when ordering.

Aids and Ideas

FREE MATERIALS FOR HEALTH AND SAFETY

The Health and Welfare Division of the Metropolitan Life Insurance Company makes available to teachers a variety of materials treating the topics of health and safety. Publications and films may be obtained, either loaned or given outright by Metropolitan, for use in the classroom and for the teacher's own information.

Special problems of today's society, e.g., air pollution and water pollution are discussed in an interesting and informative manner in the *Health Bulletin for Teachers*; filmstrips, records and booklets are correlated in a Health Heroes Series for Junior and Senior high (also recommended for teacher training.) An 18 minute 35mm filmstrip in color with recorded sound is designed for use in teacher education classes and parent orientation (PTA, etc.). The film is planned to help teachers and parents recognize signs of good health and symptoms of illness in children.

Other teaching aids are available; a listing of educational materials available from Metropolitan Life is included in a pamphlet "Publications on Health and Safety." To obtain this list, write to: Metropolitan Life Insurance Company, Health and Welfare Division, 1 Madison Avenue, New York, N. Y. 10010.

NEW AID SOON AVAILABLE TO COUNSELORS

A device to assist guidance counselors in matching characteristics of various colleges with the needs and desires of potential students is under development at Northwestern University with the aid of a $55,000 federal grant. Called the "College Suggestor," it will offer for most of the nation's colleges some 220 characteristics such as "tuition under one thousand dollars," "low student-faculty ratio," "library science a major field." The student makes his choice among these and within minutes gets a list of colleges which meet his needs. A prototype is to be completed this winter and production models will be offered for less than fifty dollars in 1967.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF PUBLIC INSTRUCTION
LOCK HAVEN STATE COLLEGE
Lock Haven, Pennsylvania 17745

Non-Profit Org.
U. S. POSTAGE
PAID
Permit No. 82
Lock Haven, Pa.

NEW TEACHING MATERIALS AVAILABLE FOR THE SLOW LEARNER

The Follett Publishing Company takes the view that ". . . slow learners are learners, not dropouts." They have developed instructional materials with this view in mind and now offer several programs of study lessons designed just for the learner who finds academic success an elusive goal.

Their programs are based on the following assumptions:

1) Instructional materials can help raise the level of measured intelligence.

2) Lack of interest and poor study habits can be corrected through the use of appropriate materials and methods.

3) The slow learner needs a feeling of "doing something right;" "of being like the other learners."

4) Reading retardation is the key problem which must be resolved to help the slow learner.

The Follett materials are developed on these assumptions and research studies conducted in a large number of schools indicates that favorable — sometimes spectacular — results are achieved. At this time the following titles are available: "World History for Slow Learners," "American History for Slow Learners," "Learning Your Language/One for Slow Learners" (for elementary and junior high schools), "Success in Language/A For Slow Learners" (for junior and senior high schools), and "Teaching Materials for the Unteachable—The Turner-Livingston Reading Series."

Follett does not offer these programs as panaceas for the problem of teaching the slow learner — the skillful, imaginative, patient, teacher is indispensable. These materials are different from traditional materials, however, and apparently do make a positive difference in teaching the slow learner. Brochures describing these programs in detail may be obtained by writing: Follet Publishing Company, 1010 Washington Boulevard, Chicago, Illinois, 60607. Single teacher guides and program kits may be purchased from the same address.

PROGRAMMED LEARNING PRINCIPLES COURSE OFFERED

A demonstration programmed course to teach the "Principles of Programmed Learning" by James L. Evans, Ph.D., is available from TMI-Grolier. The principles of programmed learning which this course endeavors to teach are "small steps," "active responding," "immediate confirmation," "self-pacing," and "program testing." These principles, developed in psychological learning laboratories, are being applied with much success to topics such as mathematics, science, language, and literature.

The course emphasizes that the most important aspect of programmed learning is "program testing" which is accomplished through the record the student makes of his learning experience. These records provide a tool for observing and studying the most complex scientific phenomenon, human learning.

This programmed course suitable for in-service training is distributed by: Teaching Materials Corporation, Grolier Incorporated, 575 Lexington Avenue, New York 22, New York.

COLLEGE CREDIT BY ETV THROUGH CORRESPONDENCE

WPSX-TV and the Correspondence Study Department of the Pennsylvania State University are cooperating to make available three college credit offerings beginning the week of February 7th. For information about these courses (see listing below), write to: Corresponding Study Department, 201 Engineering C, University Park, Pa. 16802.

ART HISTORY 10 Introduction to Art 3 cr.
Taught by Carl F. Bower, Jr., assistant professor of art history.

METEOROLOGY 300 The Weather and Ma 3 cr.
Taught by Dr. C. L. Hosler, professor of meteorology.

ELEMENTARY EDUCATION 426 Teaching Modern Math 3 cr.
Taught by Dr. Clyde G. Corle, professor of education.

ME II . 6
H, 19

THE CIRCULATOR

SIX COOR OR: EDITO E. M SS, D.

From the Editor

CREATIVITY AND TECHNOLOGY: PARADOX OR PARTNERSHIP?

There is increasing concern among some educators that the products of the "new technology," if applied extensively to the teaching-learning process, will inhibit creative teaching and learning. There is the fear that teaching machines, programmed textbooks, and other aids to teaching will reduce the rate of teacher-student interaction and actually dehumanize the educational process. Moreover, some see regimentation and loss of individuality in the classroom as inevitable concomitants of the application of technology to teaching.

Conversely, the proponents of technological innovation in the classroom believe the new teaching tools and technics provide increased opportunity for focus on the individual and will free the teacher for more interaction with individual students. This point of view foresees more creative expression in the classroom, largely as a result of a new, more "productive" relationship of student with teacher.

We suggest it would be unfortunate if technology, in the name of progress, were to suppress individual expression; it would be equally unfortunate to reject technology if it has a contribution to make to self expression and development. Further, we are convinced that the hardware, i.e., the equipment and machines, will not in themselves determine the effects of technological innovation. We feel that the causes these tools are adopted to promote, and how they are used, are the deciding factors.

In this perspective, then, it might be useful to review something of the nature and nurture of creativity — especially in the classroom. However, it must be recognized that not everything is known about this intriguing phenomenon, and one must describe the creative processes tentatively, and without dogmatism. That is, we believe enough is known to provide guidelines, to prevent the kind of paralysis born of uncertainty, and to offer some criteria for the evaluation of the effects of tools and technics when used in the classroom. We do not know enough to speak with finality, but we do believe the teacher now has available something more than intuition to predict and measure the effects of technology on creativity in the classroom.

Historically, creative ability has been equated with genius, special talent, and giftedness. The few persons who were recognized as being endowed with these characteristics were frequently viewed by their contemporaries with suspicion or rejection. Only when the product of the creative person found utilitarian acceptance, or was pleasing to the power group, was the creative individual tolerated or, more rarely, afforded genuine acceptance by his generation.

With few exceptions early studies of creativity were biographical and focused on world renowned composers, artists and inventors. Little or no study was made of environmental factors as variables affecting creative ability. One either had it "born" in him, or he didn't — it was generally felt that nearly everyone didn't.

Only during the past decade has empirical research been applied to the study of human creativity. However, during this brief time sufficient findings have been reported to form a reasonable basis for a new, more scientific, and potentially more productive view of the creative process. The essence of this newly developed view is simply that creative ability is a universal characteristic of human nature; thus it is natural, normal, and human to be creative, and every normal member of the species has an innate capacity for creative behavior.

This view is the product of an interdisciplinary approach to the study of man; its basic premise is that the individual is genetically, physiologically, and perceptually unique. His natural biological, phychological, and sociological behavior is, then, also unique. Thus, the essence, or genesis of creativity is viewed as the perceptual openness and the capacity for spontaneous expression of individual uniqueness. Evidence of applied or manifest creativity consists of ideas, concepts, processes, and objects which reflect the individuality (uniqueness) of the creator.

March, 1966 **Vol. II, No. 6**

The Circulator is published monthly, September through May, by The Lock Haven State College Curriculum Center, Lock Haven, Pennsylvania. The Pennsylvania Department of Public Instruction cooperates with the College to subsidize the costs of the Newsletter. *The Circulator* is distributed, without charge, among the schools of Curriculum Area Six.

DPI Bureau of Curriculum Planning
Donald M. Carroll ..... Director

Lock Haven State College
Dr. Richard T. Parsons ..... President

Curriculum Area Six Coordinator
C. H. Larson, Jr.

Circulator Editor
Dr. Eugene M. Nuss

It is not necessary that one see in every child a potential Mozart, Galileo, or Whitney in order to accept the position described above. The exceptional creativity evidenced in the lives of these and other masters resulted from a special combination of genetic and environmental characteristics, the formula for which no one pretends to understand.

What this perspective does suggest, however, is that every normal child has the ability or disposition to produce original and unusual ideas, concepts, processes or objects. He can contribute novel insights, innovation, inventions — whether artistic, literary, theoretical, scientific, mechanical, or organizational — but only if these natural predispositions are not inhibited by an oppressive environment. A social environment in which it is unwise or dangerous to be different can stifle the creative spirit.

While there is little the individual teacher or administrator can do about reshaping the out-of-school environment of the child, it is their major responsibility to create within the school a milieu in which creativity is fostered: to foster means to provide opportunities, encouragement, and reward.

That schools, generally, have not done well in this respect seems to be one of the findings that has received almost universal support from research studies. Our own studies of creativity have yielded several conclusions which are supported by later, more extensive research:

1) In the typical classroom creative behavior is *not* rewarded. In fact, in many situations, there exists an inverse relationship between creative behavior and scholastic achievement, as measured by grades.

2) High IQ scores do *not* relate in a positive way with high creativity. Many average and below average IQ children display under proper conditions, high creative behavior; high IQ children are often low in creative behavior.

3) Many teachers do *not* recognize creative behavior and confuse diligence, high intelligence, and the social customs of the middle class child with creative endeavor.

4) Divergent thinking is an absolute prerequisite to creative expression. This type of cognitive behavior is *de-emphasized* in the typical classroom in deference to convergent thinking, (quite possibly in response to the pressures to prepare children for standardized tests.)

Other findings could be cited, equally negative, showing that in virtually every instance creative development in the schools — kindergarten through graduate school — is not a high priority goal, or at least is not a goal about which much has been done to reach.

To say that American society as a whole has moved toward conformity and away from more creative efforts, even if true, removes none of the responsibility from the shoulders of the educator for building creative schools. In a democracy the educator, as well as the statesman, leads the people through new and often rocky paths, when new solutions must be found to both old and new problems. What, then, can the educator do to further advance the cause of creativity? Can he find a partnership with the new technology? We believe he can, but its development will require imagination, hard work, and, if we may use the term once again, a large amount of creative effort.

We would like to suggest three guidelines which can, we feel, lead to a productive relationship of modern technology in the classroom with creative learning and development among the children found there.

1) Programs of in-service training could be implemented to promote a vastly improved understanding of children by the teachers and administrators responsible for the educational program. Child study can result in satisfying and highly useful insights into human behavior, insights needed by many teachers as replacements for the misty principles of behavior studied in college psychology courses years ago. In addition the systematic study of a child can confirm or refute impressions teachers gain during the hectic day-by-day teaching experience.

2) The study of the nature and nurture of creativity can lead to a better understanding of the conditions under which its development is possible. Study groups and panels, individual teacher reports, the use of consultants—these are just a few of the professional activities any faculty might undertake—and profit from.

3) A close self-examination of teaching methods, techniques, and aids can assist the teacher to know better what he needs to do in order to accomplish his objectives. Does his approach to teaching include provision for creative development among students? Is there encouragement of divergent thinking? Is creative effort rewarded? etc.

The pursuit of these guideposts to teaching can, we believe, prepare the educator to undertake the difficult task of assessing the new technology with regard to its potential impact on creativity in the classroom. It can assist him in his continual evaluation of the new tools of learning for the purpose of adapting them to the learning situation. Most important of all, perhaps, one will find as he studies and reflects upon the human and nonhuman realities of today's world that he himself will grow in self-confidence in teaching and in living in a time when technology and its awesome power offers both threat and promise to human fulfillment.

Instructional Media

(New Ideas, Methods, Research)

MATERIALS AND ACTIVITIES FOR TEACHERS WHO WANT TO DEVELOP CREATIVE PUPILS

(Editor's Note: In the following article we have briefly reviewed several programs produced by Ginn and Company. These programs are unique and impress us as being a promising breakthrough in the difficult challenge of nurturing the creative abilities of our youth. We would be grateful to hear from teachers who have used these materials: also, we want very much to learn of other ideas and materials teachers have found valuable as aids to creative teaching.)

Many would argue that philosophy and theory are essential prerequisites to goal-directed behavior. This would hold for teaching-behavior as well as other forms of behavior. However, psychologists and educators are often accused of failing to go beyond theory and so are of little help to the teacher in the selection and use of specific technics and materials for classroom use.

In the area of creativity it is true that research thus far has been more descriptive than experimental. That is, investigators of creativity have been concerned primarily with describing the phenomenon and measuring it: the development of instructional materials and technics expressly designed to motivate the creative process, *per se* has lagged.

A notable exception to this generalization is the program of materials and activities produced and published by Ginn and Company. R. E. Myers and Paul Torrance served as consultants to this program; Torrance, of course, is one of the nation's leading behavioral scientists.

The Ginn materials consist of teachers' guides, ideabooks for students, and records. A set called "Can You Imagine" is prepared for primary pupils; "Invitations to Thinking and Doing" is appropriate for Junior-Senior High students. A third title, "Invitations to Speaking and Writing Creatively" reflects a variety of approaches to the learning process in the general area of language arts instruction. This set would seem most suitable for Senior High or exceptionally able Junior High pupils.

The record series, "What Makes Creativity Grow?" is referred to as the IMAGI/CRAFT program. There are ten albums available, each accompanied by a a teacher's guide. The content of the records include activities which measure creativity, dramatizations and exercises designed to promote creative thinking. The series is most appropriate for use in grade four and above; but some parts of the program may be used in the primary grades. Excellent results have been obtained through its use with adults.

While the Ginn programs are relatively new, they have been tested experimentally over a period of three years at the University of Minnesota. There is, then, considerable scientific evidence to suggest that these materials and activities can increase capacity to do creative thinking in almost *any* curricular field — language arts, science, mathematics, social studies, art, reading.

These materials are not intended to serve as a substitute for the teacher's imagination and ingenuity. Rather, they are meant to stimulate teachers to think of other ways to help their pupils to learn, to think, and to live creatively. Teachers who attempt to develop these characteristics in their students will find the Ginn program to be extremely helpful.

Futher information about these materials is available from: Ginn and Company, 72 Fifth Avenue, New York 11, New York. Attention: Mr. William S. Herman.

THE ASTRA-CARREL: STRICTLY 20TH CENTURY

The idea of a "study carrel," or private individual alcove from which a student may learn at a selr-paced rate in a distraction-free environment is not new. As far back as the 16th century, study carrels were to be found in monasteries and in early institutions of learning. But, it has remained for the miracles of 20th century electronics to open up the real potential of the study carrel as a tool of modern education.

The "Astra-Carrel," as one of the new individual study alcoves is called, makes available to the student a wide selection of audio materials from outside sources through a new optical sound distribution system employing a Knowledge Selector Beam. The student aims a light-seeker, mounted on a mast above his carrel, toward one or another light source on the classroom wall. The light emanating from each source varies in intensity, controlled by a sound wave carrying a lecture, language lesson or other material which is sent out from a master control unit. When the student's light-seeker intercepts the light beam carrying material he wishes to hear, a photo-electric cell in the seeker converts the beam into an electric current and feeds it into a transistorized audio amplifier which makes the sound wave audible.

In addition to audio material, the student, through the transparent front of his carrel, may view various programs offered on a television monitor.

The new "Astra Carrel" has many important advantages: It is free-standing and movable, with unlimited possibilities for individual, group or sectional arrangements. It is battery-operated, eliminating the need for any kind of network connection or distribution cables. Perhaps most important of all, since it is constructed for mass production, its cost should be within the budgets of most secondary schools and colleges.

The "Astra-Carrel" is the product of a joint research effort undertaken by American Seating Company and Grand Valley State College, Allendale, Michigan. Six prototype units were recently installed by the company at the college where they are undergoing evaluation. While it is not available to the general market at this time, this truly innovative adaptation of modern technology to an old idea warrants careful attention.

Students using the Astra-Carrel with selector beams and TV sets.

GAMES FOR ADOLESCENTS: AN EXPERIMENT IN LEARNING

The following article is an abstract of a research report on "Games With Simulated Environments in Learning" conducted by Sarane S. Boocock and James S. Coleman, Johns Hopkins University, August 1965.

Under a grant from the Carnegie Corporation a unique investigation has been conducted to study the learning value of games "played" by high school students in simulated social environments. Headed by Professor James S. Coleman, Department of Social Relations, The Johns Hopkins University, this exciting study suggests that "games" point the way toward a badly needed shift in the structure of education in American high schools.

The investigators hold that today's adolescents in school are unlike their predecessors in several important ways; thus different approaches to education are needed. When secondary education became formalized in this country, the very small fraction of adolescents who continued academic training into the secondary school came principally from professional classes, were highly motivated, eager to learn, and were more willing to consider themselves as children, and be treated as children. "The great egalitarian drift of the past century had not yet reached down to adolescents, and they saw as legitimate the demands for obedience made by adults." Thus, high school students were responsive to the teacher's authority, and were highly motivated by the demands and rewards of the teacher.

Today, high school adolescents reflect a cross section of the population. Many are not motivated toward academic goals; and that modern social phenomenon, the "teen-age culture," encourages its members to rebel against adult authority and to minimize scholastic effort. Among the college-bound, there is a level of sophistication that militates against their acceptance of a "childhood" status. Thus, the highly prescriptive, teacher-directed structure of secondary education is inappropriate for many of today's students.

The researchers go on to point up major deficiencies in secondary education:

1. It teaches for a long-distance future, whereas children are most interested in learning skills that enable them to get along in their present environment.
2. The enforced, involuntary character of the curriculum fails to provide inner motivation to excel.
3. The dual role of teacher as both teacher and judge creates attitudes toward the teacher that can interfere with learning.

With this orientation toward the ills of current secondary education, the games experiments were conducted to explore ways of altering the structure of education as a means of solving these problems.

Three games have been developed, with extensive testing, in the work at Johns Hopkins. In the games, students assume situational roles in which they must make decisions, solve problems, and reach objectives. They are "fed" some information but must conduct their own research to successfully participate in the activity. Also, the games require considerable interaction among the players which contributes to their knowledge and attitude development. The games developed and tested thus far are:

—A career game, to be played by one player or by a pair acting as a team. The player begins with a profile of a hypothetical boy or girl at age 15, and carries him or her forward through decisions about courses in school, further education, job choice, and marriage and family decisions, through age forty or fifty.

—A legislative game, to be played by a set of six to ten players, each acting as a legislator, and collectively acting as a legislature deciding upon a series of issues. In this game, the legislator's success is determined by his success in getting passed or defeated those issues his constituents want defeated or passed.

(His constituents' wishes are given to him at the outset by a set of cards he is dealt.)

—A community disaster game, to be played by a set of six to nine players, each having a certain role in a community hit by disaster. The players must solve their individual family problems as well as carry out activities which will help solve community problems. A player's success is determined by how quickly he solves his own problems, and by the other players' vote on how well he helped solve the community problems.

The values of such games are felt to be the following:

1. They bring the future into the present, allowing the child to play roles in a society of which he otherwise gets hardly a glimpse.
2. The virtue of games as motivating devices is high.
3. They are far more self-disciplinary than most other forms of learning.
4. The ability to play a game with other children is seen by sociologists as an important stage in the process of socialization.
5. The games are self-judging; the outcome decides the winner. Thus, to a great extent, the teacher can avoid the role of judge and exercise his more important function of teacher i.e., helper of students.

Experimentation and testing of these games has been carried on for two and a half years. Results indicate that the games offer no panacea for all the problems inherent in the teaching-learning process; however, significant gains are reported in these areas.

1. *Motivation* — "The level of involvement and activation of the adolescents who have played is remarkable." In one game experiment 20% of the players described the activity as "wonderful," while only 9% indicated they disliked the game.
2. *Complexity of the Environment* — Students who play the games seem to acquire a very real feeling of the situation or processes simulated, including an appreciation of the complexity of real-life situations, both present and future.
3. *Control of the Environment* — The feeling of greater control of one's environment is a result found in the games played. Students develop the feeling that people generally and they personally can do something or can act effectively in situations. This general indication that games increase self-confidence in one's capacities for coping with life suggests a possible long-range consequence of the games.
4. *Interdependence in the Environment* — Students gain an increased sense of the inter-connections between various aspects of a situation. They may see more dimensions of the total situation, or may grasp some general principle which enables them to better organize their thinking.

In addition to these general kinds of learning, each game is designed to teach different specific things relevant to the particular game situation. Again, results indicate students who play these games develop a more accurate, functional understanding of the socioeconomic realities of American life.

At first glance, involving adolescents in games — in the name of academic learning — may appear to some as being ludicrous. However, after reading the Hopkins study one must conclude that this imaginative approach has a promising potential for changing the orientations of adolescents, and for learning quite generally.

THE GRAPHIC ARTIST AND TELEVISION

by Joe Servello

Art Specialist, Division of Broadcasting, The Pennsylvania State University

Much of the learning on TV is generated by graphics—the printed words, graphs, charts, designs, drawings, slides, and other symbolic and illustrative materials. They all have a place in television that is unique. No other medium with the exception of magazines makes such extensive use of graphics. It is unique, too, that the limitations are such that the graphic artist is hard put to keep things interesting, "artistic" and clear. Of these, *clarity* is the most important.

The graphic artist begins always by seeking the *simplest* solution. How best to get the point across. Most often, good clear lettering is the result. When illustration is necessary the bold direct approach is preferred. Attractiveness often must be sacrificed for clarity and impact.

There is a severe limitation on the *amount* of material which will be readable or understandable when it appears on the screen. For lettering, a common guide is: no more than 30 letters across (including spaces) and no more than 8 lines up and down. This is not a strict rule for it quite often depends on the style of type or lettering. It is a very important consideration for the artist and he must always be ruthless with those who seem to want a mass of material to appear all at once. Often things must be broken down to parts and the cameraman will then "pan" (move camera across material) or "tilt" (move camera upand down) — but again, too much panning or tilting gets to be irritating and if it covers a *lot* of material it may distort the image. Which gets us to *ratio*.

The ratio of a TV screen is, of course, 3 x 4. This is quite important. Material that is not roughly in this ratio must somehow be made to fit. Often the most pleasurable shapes must be rejected in favor of

something less attractive but clearer. The graphic artist will often spot things about the screen for visual interest rather than center everything and leave formal leftover space on either side constantly. It must be remembered, too, that things that are constantly running off the screen may leave the viewer with the feeling that he's missing something. So generally, one fits things as best he can.

One thing that confounds people new to TV is the fact that it is impossible to get more information on the screen by making a card 30 x 40 feet than by making it 3 x 4 inches. They both appear the size of the screen to the viewer.

Black and white TV imposes our next limitation — color. Since everything ends up black, white and shades of grey, the artist must know the *value* (lightness or darkness) of a color. Red and green for instance appear almost identical on black and white TV — a sort of middle grey. So obviously red lettering on a green card is going to look like fog on the screen.

The human element is a fight from start to finish. Try as you may it's next to impossible to get people to handle visual materials carefully. Those on camera have too much to think about and those off camera are much too busy. Everything must have a good solid coat of spray to protect it(and often a coat of spray to take the shine away). Fixing solutions and dulling sprays are staples to the TV artist as much as brushes and cardboard.

There are many more limitations that are either too technical or too subtle to explain briefly. Some are hard and fast rules, some are rules which can be broken if one accepts the responsibility for the occasional total failure. But that's what makes TV graphics interesting. The graphic artist is always finding new ways of breaking rules and getting away with it. For within the great number of limitations there is enough freedom to keep things fresh and new. The excitement lies in learning through experience and ingenuity that what was a limitation yesterday is a challenge today.

Here, from left, WPSX-TV producer/director Robert Dudley, station art supervisor Joe Servello, and Art History professor Carl Barnes discusses one of the visuals to be used in a lesson.

LEARNING RESOURCES THAT CAN SAVE LIVES

Much of the information in this article was learned during an interview with Mr. E. Schrot, Driving Safety professor at Lock Haven State College. Mr. Schrot has pioneered in driver safety education and has received citations and other recognition from state and national groups for his efforts to improve safety on our highways.

The importance of driver education is recognized by an increasingly large percentage of the national population. That drivers profit from formal instruction in driving has been demonstrated beyond doubt. Over twenty surveys in various states indicate that teenage drivers who learned to drive from certified instructors have only 20% as many motor code violations and less than 50% the number of accidents than do their counterparts who "learned" to drive without the benefit of qualified instruction. Insurance companies give tangible support to these data through their lower rates for "trained" drivers.

That driver education should be offered to our youth is generally acknowledged among educational leaders; how this instruction can best be offered is a question that requires careful study. Perhaps the typical program of driver education consists of a semester or less of classroom experiences where students read and discuss texts and manuals about driving and driver behavior, take psychophysical and attitude tests, and see and use audio-visual aids. The classroom experience is usually followed by experience in actually driving an automobile for 6 hours. The usual culminating activity is the eye test, law test and skill test which, if passed, earn the student his automobile operator's license.

This sequence of activities seems, generally, to produce the desired results, although variation in teaching methods and use of materials will affect the quality of learning. It is interesting to note that experts in the field, including insurance companies, rate the classroom experience as being much more valuable than the skill training. The high value placed on the classroom experience suggests the kinds of learning that most influence the learners' future driving habits. That is, what is learned in the classroom contributes significantly to safety on the highways.

One might ask, what is really learned in the classroom that has such a strong effect on driving. Driver education specialists hold that driver education is really education for citizenship and that the essence of good citizenship is a positive attitude toward one's self and toward others. It would appear, then, that teenagers who develop a healthy respect for the rights of others and have a healthy self-concept will tend to make safe drivers, assuming their physical qualifications are adequate.

Driver education teachers need all the assistance they can get if they are to successfully assist their students in citizenship development: they need the support of their administrators, the cooperation of their teaching colleagues, adequate physical facilities, and a variety of teaching materials.

Included below is a list of instructional materials which should be available to the teacher of driver education.

1. Films. A vast selection of films and filmstrips is available to the driver education teacher. For free films, the teacher need only contact the State Library of Films, Department of Public Instruction, Harrisburg. Films from private industry are also available, many at a very reasonable cost e.g., the Driver Education Film Series produced by General Motors, which contains three excellent 16mm titles, "Your Permit to Drive," "Driving Economically," and "Practice Makes Perfect Drivers," also includes twelve 35mm filmstrips. This entire series costs just $69.75. They may be obtained from: General Motors Corporation, 485 W. Minivonden St., Detroit, Michigan.

2. Overhead Projectals. Teachers need no longer rely on their own art skills to produce transparencies; many are now commercially produced. A particularly interesting set is available from Technifax Corporation, Holyoke, Massachusetts. Their kit "A Program of Basic Driver Education" contains 40 projectals.

3. Opaque Projectors. Ephemeral materials, such as newspaper clippings, charts, etc. can be used with dramatic results with the aid of an opaque projector.

4. Psychophysical Tests. These tests measure reaction time, vision, steadiness, and other psychophysical characteristics essential to driving. A set of six pieces of equipment costs approximately $240.00. These tests provide the most obvious (and no doubt reliable) measures of the physical capabilities necessary for driving. The tests of vision are felt to be absolutely essential to a driver education program.

5. Mock-ups. These can be purchased or produced by students and teachers. As visual aids that can be manipulated to create various traffic situations, they make a unique contribution to driver training.

6. 8mm Single Concept Films. One of the newest materials for use in driver education is the 8mm single concept film. This cartridge-loading projector can be operated by a student and repeated under daylight conditions. The equipment and films are relatively inexpensive, and recent research sponsored by the AAA Foundation for Traffic Safety indicates that the 8mm films have certain advantages over teacher demonstration and actually save the teacher time while achieving excellent results. Additional information about this study can be obtained from: AAA Foundation for Traffic Safety, Washington, D. C.

A feature article in the November AV Guide by Dr. Harry D. Fletcher, Institute of Public Safety, Pennsylvania State University, describes the single concept or "loop-film" method of driver education.

7. The Driving Simulator. One of the most important developments in driver education today is the driver simulator. This equipment is patterned on the same principle as aviation's flight trainers. Small stationary autos equipped with the latest controls are operated by students in response to driving scenes shown on a screen in front of the classroom. Student "driving" behavior is recorded on a master unit at the rear of the classroom where the teacher can see, at a glance, the progress of each pupil. A recent study by the Pennsylvania Department of Public Instruction indicates the driver simulator can be used to great advantage in teaching driver education. A picture of a class in driver education is shown below.

In conclusion, it is sobering to note the severe cost in lives and property our nation pays each year for the convenience of operating motor vehicles on our public highways. It is true that effective driver education for our youth can greatly reduce that cost; yet a recent study indicates that only 4 out of every 10 boys and girls attaining legal driving age have been afforded complete driver education courses meeting nationally recognized standards. This low enrollment is often attributed to high cost and inefficient and/or ineffective use of teacher time. The instructional materials listed above can help reduce inefficiency and enhance effectiveness. It is probably true that the money Pennsylvania motorists are paying this year for increased auto insurance rates could equip every high school in the Commonwealth with the materials and equipment requisite to an ideal program of driver education.

Driver education students prepare to take lessons on Allstate Good Driver Trainer units.

PAPERBACKS FOR RELUCTANT READERS

Excerpts from an article written by Charles G. Spiegler, Commission on Lifetime Reading, International Reading Association are included in the following article.

There isn't a school district without its fair share of reluctant readers, whose reluctance to read is homemade or school-made, not inborn. It is a reluctance spawned in homes at a cultural decline where encouraging words about books or ideas or the exciting world they come from are never heard. It is a reluctance forged from the zeroes in the record books issued for failure to read a prescribed book from the prescribed book list fashioned by the prejudices of the pedagogues. It is a small wonder that a vast number of American youth have lost all ardor and curiosity about books, and have never sought the pleasure of their company.

"Three vigorous revolutions have begun to change all that. The first is the paperback revolution, which has made it possible, at little or no more than it costs him to down a milk shake, for any youngster to buy anything from *The Story of Ferdinand* to *War and Peace.*

"The second is the revolution in writing for youth. With all due reverence to the titans of literature, the fact is that theirs is a content beyond the ken of many non-academic millions in our classes; theirs is a style beyond such childrens' grasp. To fill the need for content and style more closely related to the interests and capacities of average youth, there has arrived a Golden Age of Writing for Youth, represented, for example, by an Anne Terry White who brings a crystal lucidity, combined with dramatic excitement, to whatever she essays: from stolid stone, *Rocks All Around Us;* to prehistoric man, *The First Men in the World;* to pure biography, *George Washington Carver.* A Glenn Balch in the animal kingdom, a Herbert Zim in the world of science speak the language of youth on the subjects of youth — and without reducing it to the infantile.

"The third revolution has been in our concept of the genus "reluctant reader." The evidence keeps piling up! It isn't that Johnny doesn't read because he can't. Rather, Johnny can't read (as well as he should) because he doesn't! And he doesn't because he finds it a bore! Give him a title, a book jacket that rings true. Let the world and its infinite wonders be the subjects he may choose from. Appeal to his interests — and Johnny reads."

It is with this in mind that a list of high-maturity, easy-to-read paperback books for junior high school students has been compiled and annotated by Mrs. Ruth R. Adams, The City University of New York, for Scholastic Book Services — with this caution: a book list must describe, not decide; suggest, not command. This list includes biography, science and science fiction, historical fiction, animals fact and fiction, modern fiction, and classics, and is based on the rationale — "Give children books to respond to their nature, attract their eye, help them dream."

You will also find hundreds of titles in Scholastic's Readers' Choice Catalog — the largest selection of professionally approved paperbacks for schools. More than 700 titles for grades two through twelve, all grouped by grade level and subject category, all concisely annotated, make it easy for you to select the book you need.

For your free 1965 Readers' Choice Catalog, write to Scholastic Book Services, 904 Sylvan Avenue, Englewood Cliffs, New Jersey.

CREATIVE PROGRAMS THROUGH MUSIC

The Peripole Music Corporation is probably well known by most music educators as manufacturers and distributors of informal musical instruments for the classroom and recreation. Several of their newer programs and equipment may not be generally known among teachers however, and, after reviewing these materials, we believe they deserve special recognition.

The Peripole philosophy is that ". . . music, in all its aspects, is an integral part of the elementary and junior high school curriculum. It must be for all children, taught by all teachers, supervised and guided by music specialists and part of a total well-balanced curriculum." This philosophy has led to the development of several programs, which, if not unique, are at least very unusual and exciting. Several are briefly described here:

THE SOUND KIT — This program is designed to teach "sound" in the elementary and junior high school science curriculum through its application to music. Through Sound Kits children learn about the properties of sound e.g., pitch, quality, intensity, and duration. They learn how sound is produced, how it travels, and how it is reproduced. Self-discovery and exploration are emphasized.

THE ETHNIC CULTURE SERIES — This series uses music to acquaint children with peoples of other cultures. The authors of this series believe that ". . . when children identify themselves with other peoples — by singing their songs, playing their instruments, participating in their games etc., intercultural understanding and respect are furthered." (We are not music educators, but from a psychosociological basis we heartily agree with the above premise.)

THE PERIPOLE RHYTHM ZOO — Designed for the 3-8 year old child and for the mentally retarded child, the "Zoo" merges animal forms with rhythm instruments to produce the sound or call of the animal, its environment, or a tone that may relate to or remind the child of the animal.

These are only a few of the Peripole programs; others are available and they all appear to be imaginative, well thought out approaches to promoting, through music, the healthy growth and development of children.

Additional information is available from: Peripole, Inc., 51-17 Rockaway Beach Blvd., Far Rockaway 91, L. I., New York 11691.

ELECTRICITY/ELECTRONICS INSTRUCTION FOR THE TECHNICIANS, ENGINEERS, AND SCIENTISTS OF THE FUTURE

In considering methods of instruction for adoption by school systems, one fact can be accepted as an axiom. The subject matter of any electricity/electronics class is the same as all others since it is based on the laws of nature. The only point of difference is the method of instruction.

More than thirty years of research, experiments, and day-to-day experience in the field of teaching electronics have confirmed there is no substitute for learning by doing. From the most preliminary course in basic electricity to the most advanced course in electronics offered for high school level students, this theory of instruction is an integral part of the DeVry Method. Students learn by doing.

Under the DeVry Method each student has his own work books — simply written for the age level of the student — detailing projects and experiments consistent with his ability. Students work in teams of two; they handle the components themselves; they *see* and *feel* the various parts; through their own tests they observe the results of their work. Brilliant students can advance as fast as their abilities will allow. Slower students are not discouraged but can go ahead at their own pace. Absentees have ample opportunity to make up their work without holding back the progress of the class.

The DeVry Basic Electrical course is the answer to the question, "At what level can we start pupils in training for careers in electronics?" This portion of the DeVry Method is aimed at students with *no* knowledge of electricity. As such it can be installed as a complete course in electricity in junior or senior high school. However, so simple and graphic is the operation of the Basic Electricity Trainer, it is also used as a demonstration unit in beginning classes in science and physics.

It is best to look upon the Basic Electricity Trainer in its wider sense, however — as an introduction to electricity for students who will progress into the more advanced classes of electronics. Here the Basic Electricity Course provides even greater benefits. First, it allows the students to grasp the fundamentals easily and quickly. They rapidly move through the beginning stages of recognizing fundamental components, and the learning of terms. They are immediately introduced to the technique of "learning by doing" — in actually building and testing basic circuits. And they are initiated into the "team" method of classroom routine by working out their problems with a partner — the same method proved so successful thoughout advanced training in the DeVry Technical Institute.

The DeVry Electronics courses are an extension of the same methods used in the Basic Electricity course. Some of the equipment is identical and the same instruction routine is observed. There is no complex (and expensive) control panel to be wired for classroom demonstrations. Each student has his own workbook detailing the experiments to be performed. Each team of two students work together at their individual classroom electronics laboratory — the DeVry Trainer. The instructor is relieved of a tremendous amount of non-productive routine. He does not have to check tools and components in and out of a tool room; he is not tied to a demonstrator but is free to devote his time to individual help and guidance.

So direct and flexible is the DeVry Method of electricity/electronics instruction that it can be adapted to any school and any set of conditions. It is recognized, however, that no two schools are exactly alike in their requirements and each must be handled as a separate problem.

The installation required for a large technical school in which most of the students will either go directly into industry or to a more advanced technical school might be completely different from a school that is liberal arts in nature and in which a high percentage of the students can be expected to go on to colleges.

For further information about the DeVry Method write to: DeVry Industries, Inc., 3956 W. Belmont Avenue, Chicago, Illinois 60618.

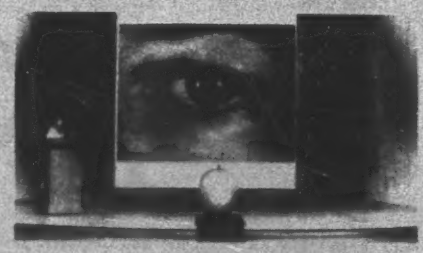
The DeVry Basic Electricity Trainer

LARGE SCREEN TELEVISION PROJECTION SYSTEM

Kalart Company, Inc., active in the photographic and Audio-Visual industry since 1922, presently manufactures an extensive line of photographic and Audio-Visual equipment which includes the Series 70 16mm sound motion picture projectors, the Soundview 35mm Filmstrip line, Moviematic and Duolite 16mm Repeater projectors, the Soundstrip System 35mm sound on filmstrip, and the Tele-Beam projectors.

The Tele-Beam projector is capable of projecting sharp, bright television pictures up to 9x12 feet in size from "off-the-air" VHF and UHF broadcasts as well as from closed circuit sources such as TV cameras and video-tape recorders. The Tele-Beam projector has been endorsed by many leading closed circuit TV camera manufacturers for use in conjunction with their equipment as part of a closed circuit TV system and can be supplied for operation with higher scan rate domestic systems.

The advantage of large screen television is illustrated below in its use for both lecture hall demonstrations through closed circuit TV (picture #1) and curricular activities in a school auditorium through standard TV broadcast (picture #2).



The Tele-Beam Model A912-A, for closed circuit operation, will accept inputs from TV cameras and other composite video output sources.

The Model A912-B, for closed circuit and "off-the-air," is equipped with a built-in UHF/VHF two to eighty-three channel tuner. Projector includes Projector Head, Control Unit, 3 ft. control cable and 12 ft. power cable.

A Tele-Beam Large Screen TV Projector

For additional information and the latest Tele-Beam catalog and price list write: Tele-Beam Division, The Kalart Company, Inc., Plainville, Connecticut 06062.

The Kalart Company also will distribute FREE to teachers and school administrators interested in the improvement of education and training methods a booklet, "A Treasure Chest of Audio-Visual Ideas," upon request. This booklet is kept up-to-date with frequent minor revisions and has undergone four major revisions to present material that is not only useful, but timely. The 1965 edition has been expanded in both size and scope to meet the ever growing need for useful audio-visual information.

LISTENING SKILLS IMPROVED THROUGH COMPRESSED SPEECH

Research on "compressed speech" has been conducted at the University of Wisconsin, and a few applications of the technique have been cited. This is a technique of instruction which capitalizes on the ability of a person to learn to listen at a speed more rapid than the normal rate of speech. "Compressed speech" is explained in a pamphlet *Tape Pitch and Tempo Regulator* available from the: Gotham Audio Corporation, 2 West 46th Street, New York, New York 10036.

Area Six Schools

(Events, Projects, Views)

(Editor's Note:) Included in the Area Six Schools section of this issue of the *Circulator* are brief reports of three teachers who have developed innovative programs for use in their respective schools. We invite the teachers and administrators in Area Six to contact us if they have similar activities in their schools. We are eager to give recognition to creative teachers and to the schools in which they teach.

BALD EAGLE AREA HIGH TEACHER HEADS DEVELOPING INSTRUCTIONAL MATERIALS CENTER

Mr. Voyzey is a graduate of the Pennsylvania State University. There he received the BS and MEd in Art Education. He also attended the Pennsylvania State University Media Specialist Institute in the summer of 1965. He has taught art at Bald Eagle Area for 6 years. In addition to his regular teaching duties and work as Instructional Materials Director, Mr. Voyzey is active in a variety of activities including the creation of art work which is used to beautify the school.

Mr. George Voyzey, Instructional Materials Director, is providing imaginative leadership to the development of an Instructional Materials Center in the Centre County, Bald Eagle Area High School. With the full support of Superintendent John Powers and Principal Gerald Wiser, the Center is now in its second year and plans are underway for future expansion of its facilities and services to teachers. It is anticipated that Mr. Voyzey will devote full time to this developing program, beginning with the 1966-67 school year; at present he divides his time about equally between the Center work and art instruction in the high school.

The Center and its Director are making a significant contribution to classroom instruction. According to Mr. Wiser, the principal, ". . . since Mr. Voyzey has assumed the position of Instructional Materials Director, there has been a noticeable change in teacher attitude and usage of instructional materials." When one examines the services offered to teachers by the Center it is not difficult to understand the reasons for this encouraging change among teachers. For example:

- Workshops and demonstrations of instructional media are conducted for teachers. Art work is correlated with teaching aids to assist the teacher in making his lessons more attractive and meaningful.
- Audio-visual equipment is stored, repaired, and scheduled for classroom use — in the Center. All a teacher need do to use a piece of equipment is to schedule it a few days in advance. Student assistants deliver and operate the equipment when and where the teacher wants it.
- Mr. Voyzey works closely with the Faculty Steering Committee (which the Principal refers to as the "senate") in developing policy and purchasing procedures relative to instructional materials. (BEA allocated $5800 for AV materials this year.) He keeps teachers up to date on new equipment and materials, where to get it and ways to use it effectively.

The school is proud of its newest addition to the equipment inventory of the Center, the Gestefax Machine. This electronic device produces a facsimile on a stencil or on acetate for use on the overhead projector — in the same operation. Now stencils for mimeographing can be produced electronically. Many uses of this machine are possible, including the reproduction of maps and photographs, detailed drawings, and copies of just about anything — up to 10,000 copies from one stencil.

Mr. Voyzey, center, demonstrates use of Gestafax machine to fellow teachers.

Working with students and teachers Mr. Voyzey has made a scaled model of the Instructional Materials Center as it will appear when completed. Some of its most noteworthy features are a room in which teachers can work with materials; a room for previewing films; individual study centers for students; a room for recording and space for listening to music and language recordings.

Bald Eagle Area will soon have something approaching the ideal facility for utilization of instructional materials. This development is possible only through administration-faculty-student cooperation — and the efforts of the very creative, hard working George Voyzey.

BELLEFONTE AREA TEACHER DEVELOPS INDIVIDUAL WEATHER UNIT WITH THIRD GRADE CLASS

The interesting and highly imaginative unit described below is the creation of Mrs. Margaret Long, who received her B.S. degree in music from Susquehana University and elementary certification from the Pennsylvania State University. She has taught in the Bellefonte Area Elementary Schools, Centre County, for ten years.

The unit on weather was developed in Mrs. Long's third grade class as a natural outgrowth of the childrens' curiosity about the lack of snow before and during the 1965 Christmas vacation.

The slogan "Think Snow" that was prevalent in the area brought such questions as, "Why haven't we had snow? How do they make snow? When will I be able to use my new sled?" Because interest was especially high, it seemed timely to begin a unit on the weather.

Rather than use the traditional committee approach, the teacher tried daily motivation on certain phases of the weather and relied on the inventiveness of the pupils to individually develop the unit by bringing in reports and experiments.

The unit outline that emerged, with the pupils' assistance, is as follows:

I. What is weather?
   - A. Kinds
   - B. Seasons
   - C. Earth and its atmosphere
   - D. Weather make-up

II. Water in our air
   - A. Clouds and their formation
   - B. Water Cycle
     1. Evaporation
     2. Condensation
     3. Precipitation
   - C. Storms

III. Qualities of air
   - A. Weight
   - B. Pressure
   - C. Takes up space
   - D. Air is everywhere

Also, as part of the unit, a rather extensive bibliography of articles, books and film strips on weather was completed. While working on these topics the students obtained more information from opaque, overhead, film strip and 16mm film projectors, and also by observation and experimentation. The pupils used the Coca Cola Company's Service Kit from which they built an anemometer, barometer, hygrometer, wind vane, air current detector, cloud direction indicator and humidity house. Their individual projects included weather devices, reports, experiments, creative stories and seasonal charts.

Correlation was made with Language Arts by writing original stories and poems; with mathematics, by comparing a number of story problems; with art, by cutting snowflakes, making snowmen, and constructing workable models depicting the earth with its four seasons; with social studies, by showing the many effects of weather on people throughout the world.

An original game, Weather Wisdom, was devised by Mrs. Long to familiarize the children with their new vocabulary and make it part of their everyday language.

Mrs. Long and her students play the "Weather Wisdom" game.

Other activities included a trip to the local weather station, pupil forecasting for a three-week period, and development of graphs for recording of weather information and conditions.

At the conclusion of the project all the facts and information were incorporated in individual notebooks.

The teacher found that by having the children work individually, more participated in more ways than ordinarily would be the case in committee work. The work was more original and a greater variety of projects were thought out and developed. Each child had more opportunity to work on the one area of his greatest interest.

Mrs. Long and her principal, Mr. Andrew J. Chatlas, feel the project has been highly successful, especially as it encouraged individual indepndent study by the pupils. Interested teachers and others are invited to contact either Mr. Chatlas or Mrs. Long if they wish further information concerning the unit.

Mrs. Long's students work at individual projects connected with the weather unit.

BUCKTAIL TEACHER IMPLEMENTS PROMISING GUIDANCE PROGRAM

Mr. Joseph B. Desmond, Jr., Counselor for the Bucktail Area Joint High School is a graduate of Lock Haven State College. Upon graduation he became physical director of the Renovo YMCA. Later he taught special education and geography at Bucktail until entering a full-time graduate program at the Pennsylvania State University. Mr. Desmond attended an NDEA Institute for Counselors which enabled him to complete a full-year of graduate work and earn his masters degree. It was during his graduate work at the Pennsylvania State University that he designed the guidance program discussed below.

The Bucktail Area High School initiated this year an occupational guidance program for its 9th grade students. The program is under the direction of Mr. Desmond and incorporates several unique features which are designed to meet the particular needs of the young people who attend Bucktail Area High School.

While attending an NDEA Institute for Counselors at Pennsylvania State University, Mr. Desmond conducted a study of the Renovo Area and the careers of graduates from the Bucktail High School from several graduating classes. The purpose of his study was to determine the need for a vocational guidance program in the Bucktail School.

This study indicated a very great need for vocational guidance early in the secondary school program of children who attend this particular school. Approximately 80% of the young people who leave the Renovo Area for employment or further training, never return to Renovo. These figures suggest that the students of the Bucktail Jointure need very much to be aware of employment and training opportunities outside the area in which they live. It was recognized also that students need to understand their own capabilities and interests in order to choose vocational areas in which they might prepare through course work and further investigation into the work area itself. These two basic needs — the need to know about the outside factors, and about oneself — were planned for by an imaginative program which had its beginning just last November.

Perhaps the most interesting aspect of the vocational guidance program is the Career Exploration Unit. The Career Exploration Unit was developed originally by Mr. Glenn Harr, Assistant 4-H Club Leader from Penn State. Mr. Harr assisted in the implementation and evaluation of the Career Exploration Unit at the Bucktail School.

This unit consists of three phases. First, the students conduct a self-analysis and evaluate their strong and weak points. This is done with the aid of flannel boards, projective technics, preference tests, etc.

The second phase emphasizes the world of work and what is expected of people who hope to enter it. Here panels of experts from the community speak with students; materials from industry and state employment services are made available to students along with a variety of other materials descriptive of opportunities and requirements for employment.

The final phase of the unit focuses on the student in relationship with job opportunities. Here he is encouraged to match himself with the areas within the work areas that he seems to be best suited for. It is here where much is learned about the student's concept of self and his view of reality outside his own immediate self.

This unit is scheduled for six weekly meetings and is followed by a continuation of guidance activities during which the student is assisted to examine himself in relationship to the external world. During the final months of the school year, individual interviews are conducted with each student to determine the extent to which he has profited from his experiences in the vocational guidance program.

Mr. Desmond believes that ". . . the emphasis in our program is on thinking about the future, not with making final decisions. We want to help our students to make choices in view of self-understanding and a more adequate knowledge of the world of work. The end result we seek is clarification, understanding, and above all, self-awareness."

The program described above seems particularly appropriate for young people who are going to school in an area faced with economic uncertainty of the type the Renovo area now experiences. It would seem that the imagination and planning of this counselor, and his administrators who have supported him, are better preparing the young people of this area to understand themselves, their community and the world which lies beyond. For these gains, the new vocational guidance program deserves commendation.

Mr. Desmond counsels a senior student as part of the "Career Exploration Program."

However, of even greater significance, than this new awareness of external reality, the emphasis given by the program to self-awareness, self-analysis and self-direction are even more noteworthy in a day in which social conformity and regimentation make it difficult for people to think for themselves. In a time when high schools, colleges and industry are pressuring young people to make vocational choices earlier and earlier in life, Mr. Desmond's program is saying to the student, "Know thyself." It might be well if more counselors, teachers and parents were to heed this admonition.

Aids and Ideas

PUPPET PROVIDES INSIGHT INTO CHILD BEHAVIOR

One of the very interesting and novel approaches to understanding the feelings and interests of the child is being employed by Mr. William Schall in the Akeley Campus School at Lock Haven State College. Mr. Schall is a child study enthusiast and uses a variety of technics and tools to learn more about his students' progress and development.

He uses a puppet, known as Mr. Knish, in a way that seems to have a great deal of appeal to children at the elementary school level. Mr. Schall explains his use of Mr. Knish as follows: "I usually ask the students to put their names on the top of sheets of paper which are distributed to them, and then I introduce Mr. Knish to the class and explain that he has magical powers which might very well grant them any three wishes they want to make. I ask the children to think very hard and carefully of three wishes, and then each child is given the opportunity to rub Mr. Knish's bald head (the source of his magical power). Each pupil writes his three wishes on the papers, or if they are unable or unwilling to write, they tell the teacher of their desires."

Following this procedure Mr. Schall collects the wishes in a box held by Mr. Knish. He then studies the wishes made by each child and where wishes appear unnatural he may follow up the activity with a conference or merely observe the child more closely. In some cases the wishes are of such a nature, that, when combined with other psychological data, suggest that the child is in need of counseling by a school psychologist.

Mr. Schall feels this activity works very well with young children. He feels he has gained insight into the perceptual fields of more of his students with Mr. Knish's assistance than he might have gained without the magic puppet. Teachers interested in learning more about the use of this technic might write to Mr. Schall at the Akeley School or refer to the January 1956 issue of the *Grade Teacher*.

DO YOUR STUDENTS KNOW ABOUT PATAGONIA?

While it has become trite to say we live in "a shrinking world," it is none-the-less true; this fact has special implications for the teacher of social studies. Skill in map reading, for example, is an essential requisite to effective participation in this "shrinking world." Thus, within the profession there is a growing awareness of the need to examine aims and procedures relative to instruction in the use of maps and globes.

The National Council for the Social Studies offers first-class help to teachers, both elementary and secondary, who wish to develop in their students the ability to use maps. Bulletin No. 15 of the "How To Do It Series" is an excellent guide on how to introduce maps and globes. In addition to a brief discussion of general objectives and procedures of teaching map and globe use, the Bulletin suggests specific goals and procedures for teachers to develop the following general skills:

1) Providing a Wide Acquaintance With Landscape Features (Grades I and II)
2) Developing Readiness to Undertake Map Reading (Grade III)
3) Introducing Flat Maps (Grades III and IV)
4) Developing Initial Concepts in the Use of the Globe (Grade IV)
5) Developing Fundamental Skills in the Use of Maps (Grade V)
6) Developing Advanced Map Reading Skills (Grades VI-VII)
7) Refining the Child's Map Reading (Grade VIII and above)

Bulletin No. 15 "How To Introduce Maps and Globes," is available from the National Council for the Social Studies, 1201 16th Street, N.W., Washington 6, D.C. Price 25 cents per copy, discount on orders of more than one copy.

P.S. By the way, what do you know about Patagonia?

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF PUBLIC INSTRUCTION
LOCK HAVEN STATE COLLEGE
Lock Haven, Pennsylvania 17745

Non-Profit Org.
U. S. POSTAGE
PAID
Permit No. 92
Lock Haven, Pa.

ANTIQUES WILL REAPPEAR

The program series "Antiques," which proved one of the most popular evening presentations of WPSX-TV, will return to the schedule in Spring 1966.

The final program in the current run of these Eastern Educational Network programs was shown on Channel 3 in December.

The 20-program series was produced by WENH-TV in Durham, New Hampshire, and features antique dealer/collector George Michael discussing all types of American antiques.

NEA OFFERS HELP WITH PROBLEMS COVERED BY AUTOMATION

The NEA Project on the Educational Implications of Automation (EIA) was established in 1961 through a grant supported by the International Business Machines Corporation. One of its primary purposes was to assist the pupil, teacher and parent in recognizing the benefits and problems created by automation.

As the result of seminars, research, analysis of educational problems, current job trends, and vocational and educational needs of today's citizens, the Project suggests several basic responses the schools can make to the challenge of automation. Also, from pilot projects, and other interpretative activities, information is made available to schools and boards of education to help answer questions such as the following:

1. Where should vocational education be offered in school?
2. How much and at what point in curriculums should technical education be found?
3. How can teachers do a more effective job with motivation?
4. How can basic skills or tools of learning be improved?
5. What kinds of guidance are most effective?
6. How can help be obtained for needy students?
7. What should schools do about educating for leisure?
8. What should be in the curriculum of the technical school? the community college? the adult education program?

Virgil M. Rogers, EIA Project Director believes "... the problems created by automation can be met and overcome by the right kind of education and that the machines invented by man's brainpower can be a boon and not a bone to humanity."

The NEA Automation Project exists to help meet the challenges to education presented by an increasingly complex and pervasive technology. Those who wish such assistance should write to: Virgil M. Rogers, Project Director, Educational Implication of Automation, NEA 1201 Sixteenth St., N. W., Washington, D. C. 20036.

WANTED: IDEAS

In a recent report by the Harvard Graduate School of Education, dean Theodore R. Sizer makes the point that technological advancement has been so rapid in recent years that our schools have more devices available than they know how to use, or for which they have a purpose. We quote Dean Sizer: "We have technical devices of great sophistication (teaching machines, audio and visual equipment, computer-based teaching systems) before we have clear ends, much less materials, for them. We have better teaching machines than programs for them, better educational television equipment than ideas on how to use it. The new companies are as impatent as the administrators in Washington and we run the risk of having the schools inundated with quantities of technically exciting but intellectually inadequate materials."

It is disturbing to note this alleged "cart before the horse" trend in the field of instructional media. Apparently more creative ideas are needed to make good use of the exciting equipment now available to most schools.

VOLUME II, NO. 7

APRIL 1966

AREA 6 CURRICULUM CENTER
LOCK HAVEN STATE COLLEGE
LOCK HAVEN, PENNSYLVANIA

THE CIRCULATOR

From the Editor

THE INDIVIDUAL IN PERSPECTIVE

In the examination, use, and evaluation of instructional media and curriculum materials, two important and challenging considerations for educators are 1) the uniqueness of the individual learner, and 2) his sociality or affiliable nature. These two characteristics, or needs — individuality and sociality — seem to present a conflict within human nature. The implications of this condition are basic and pervasive for schools committed to develop individual differences and, at the same time, assume a major role in the socialization of youth.

It is no mean task to preserve the integrity of the individual while encouraging him to conform to the expectations of his society or societies (American youth belong to numerous sub-cultures); however, in the interest of optimum human growth and development both must somehow be provided for. This is the point: the school must develop its *modus operendi* carefully; it should not promote the development of one characteristic to the exclusion of the other; it must evaluate its tools and technics with the individual in perspective.

In short, it must somehow learn how to have its groups and individuals too.

We do not presume to have adequate answers to the problem of how society (in this case the schools) can promote group cohesiveness and yet provide for individual diversity. We offer here only a brief review of the problem essentially from a behavioral point of view, for we believe the behavioral sciences are making an increasingly important input to the understanding and solutions of problems in education.

How to provide the "proper" setting in which each person can be at the same time a human individual and a member of a human group is a problem not exclusively that of the schools. In the thinking and writing of many behavioral scientists is the fear that American society is becoming a type of social arrangement in which the group is paramount — the individual secondary. Implicit in this arrangement is the loss of human individuality, the suppression of human creativity, and the ultimate retardation of the progress of mankind. To some, society possesses a seemingly irresistable tendency to socialize and regiment the thoughts and actions of the individual in complete violation of the natural laws of diversity, and in direct conflict with the religious and political heritage of American society.

Conversely, it is generally recognized that the function of the group has become critical to human progress due to the increasing complexities of society. For example, within a society where cultural pluralism is valued and intensive specialization necessary, cohesive planning and action are dependent upon that society's capacity to communicate. Moreover, effective communication is most likely to occur within the context of face-to-face groups as contrasted with diffuse mass media or the unilateral (top to bottom) directive characteristic of bureaucracy. Finally, group membership has become increasingly important to the individual as a source of security in a society governed more and more by dynamics removed from the understanding and control of the individual.

Thus the human group is both a vehicle through which important human needs can be met and a potential agent of suppression and conformity, the very antithesis of human freedom and progress. This dichotomous function of the group presents to society a dilemma which it must resolve if the potential of its human resources is to be developed. The critical need for creative ideas and approaches to current problems in education and elsewhere underscores the importance of making the "right" decisions with regard to the individual and the group.

The schools must avoid mass solutions to important individual problems in learning. Homogeneous grouping practices, the one text for all policy, standardization of curriculum and examinations — all tend to trim and shape the individual to a preconceived mold. With regard to human groups, homogeneity is a deception that has the harmful effect of encouraging teachers to minimize individual differences and to think of children as types rather than as persons.

April, 1966 **Vol. II, No. 7**

The Circulator is published monthly, September through May, by The Lock Haven State College Curriculum Center, Lock Haven, Pennsylvania. The Pennsylvania Department of Public Instruction cooperates with the College to subsidize the costs of the Newsletter. *The Circulator* is distributed, without charge, among the schools of Curriculum Area Six.

DPI Bureau of Curriculum Planning
Donald M. Carroll ..... Director
Ernest M. Rockey .... Director of Field Services

Lock Haven State College
Dr. Richard T. Parsons ..... President

Curriculum Area Six Coordinator
C. H. Larson, Jr.

Circulator Editor
Dr. Eugene M. Nuss

There is no greater challenge to the American schools than how to keep the individual learner in perspective. Promisingly, more attention is being directed toward this elusive goal. The increased research effort in the area of human creativity is making available new guidelines, and national professional organizations are devoting special committee work and publications in this interest. (For example the entire 1964 Yearbook of the Association for Supervision and Curriculum Development is devoted to individualizing instruction[1]; recently, four major organizations collaborated to produce a booklet titled "A Climate for Individuality,"[2] (See below for reference citations).

We should like to quote from "A Climate For Individuality."

> "To teach large numbers of children, with all their infinite variations, the schools need all the ingenuity and inventiveness they can command.
>
> "The most important thing of all may be some subtle combination of attitudes and purpose that stimulates everybody's growth. For that the best word may simply be 'climate.' One meteorologist defines the climate of any place as the 'weather you expect there.' The weather a youngster can expect from day to day in his school is the climate for his growing.
>
> "An educational program is designed to present certain common learnings, common skills, common ethical values, and common behavioral patterns. But only the individual pupil can learn them. Learning is often achieved in a group situation, but the individual, not the group, learns. Extreme deviations in potential intellectual, emotional, physical, and creative capacity magnify the need for teachers to employ all sorts of inventiveness both in teaching the common learnings and in furthering individual development. Only as the teacher stimulates, provides a climate of freedom, and surrounds each learner with a maximum of learning tools will the pressures to standardize the content, methods, materials, and outcomes be counteracted."

The booklet lists specific criteria for schools and community that suggests various ways of approaching the whole problem of fostering individuality. The list is too lengthy to include here; however, we do offer below several of the guideposts offered relative to instructional materials:

> "1. Are instructional materials selected with an eye to their adaptability for and encouragement of individual study and individual competence?
>
> "2. Is care exercised to secure a wide variety of instructional materials, suitable to divergent individual needs as well as to various levels of ability?
>
> "3. Are instructional materials selected to give learning an active rather than passive character? Do the materials stimulate individual action and a venturesome trying-out of new experiences?"

As one of society's major institutions, it is the responsibility of the school to contribute significantly to the socialization of youth. This includes teaching the attitudes and skills necessary for communication and cooperation in a democratic society. It also mandates that the schools and other institutions preserve and enhance the integrity of the individual — an absolute prerequisite to self development and group progress. These are imposing tasks, but the effort must be made.

We feel the materials listed below will provide some assistance in this regard. We have reviewed them, and feel they represent some of the most constructive suggestions and ideas thus far made available to teachers. All materials are available on loan from the Lock Haven State College Curriculum Materials Center —

(1) Association for Supervision and Curriculum Development Yearbook 1964

(2) *A Climate for Individuality*
American Association of School Administrators
Association for Supervision and Curriculum Development
National Association of Secondary School Principals
NEA Department of Rural Education

(3) National Association of Secondary-School Principals "Focus on the Individual — A Leadership Responsibility" — A filmstrip with correlated recordings.

(4) "The Classroom Revolution" — A filmstrip with correlated recordings.

(5) National Association of Secondary-School Principals "Focus on Change" — A film with correlated recordings.

(6) National Education Association — 1965 Project on Instruction — "Deciding What to Teach," "Planning and Organizing for Teaching" — 2 filmstrips with correlated recordings.

Instructional Media
(New Ideas, Methods, Research)

ART FILMSTRIPS FOR TEACHERS

A new filmstrip series on the teaching of art produced by the Society For Visual Education, Inc., provides a helpful assist to teachers, especially for teachers who have not had extensive art training.

The series includes six filmstrips, each treating an art technique, lists of materials, and suggestions for art projects.

For information on this series or other related materials, write to: Society for Visual Education, Inc., 1345 Diversey Parkway, Chicago, Illinois.

DEVELOPMENTAL READING ENHANCED

Teaching reading by laboratory methods through the use of individual instruments for each student is proving to be far superior to conventional teaching of the past. Even when laboratory-type teaching in its initial stage is under-equipped, and conducted with teachers who have only recently begun the teaching of reading, it is safe to say that by far the majority of reading laboratories do a more effective job of teaching than is done in the normal classroom.

Teacher interest, the proper use of motivation, insight based upon experience, and enthusiasm along with adequate training instruments and correlated materials are the vital parts of a reading laboratory.

A working laboratory can be a reality in a short period of time, with the Craig Reader and its diversified programs. This new individual training program combines the professional efforts of educators, training specialists, and psychologists.

Three significant techniques in reading improvement methods are advanced by the use of a Craig Reader:

The Expanded Line technique lessons progress from short lines of about three words to long lines of over seven words. Since only a line at a time is exposed, the reader develops more efficient eye movements and tendencies to skim are discouraged, and regressions are eliminated.

Serial Tachistoscopic training is exclusive to the Craig Program. This technique exposes digits or phrases serially, one at a time in varying locations on the screen. The student is required to remember the series in the same order they were exposed.

The same rapid line-by-line tachistoscopic exposure is utilized in the Perceptual Training technique. Helpful statements are contained on each frame and proceed from a very narrow line width to a more challenging line width. This encourages the student to read groups of words in a meaningful, sequential pattern.

In recognition of the fact that abilities in learning, reading, and comprehension vary widely, the Craig Programs are developed to make it possible for each student to gain maximum results through progress at his own individual rate. The Craig Reader provides programs for elementary, high school, college and adult use.

Additional information may be secured by writing to Craig Corporation, Los Angeles, California 90016.

Students using the Craig Reader and materials.

EDUCATIONAL TECHNOLOGY AND HUMAN DEVELOPMENT

BY DR. PHIL C. LANGE, Teachers College, Columbia University. Dr. Lange is Professor of Education, Teachers College, Columbia University, New York City. He received his Ph.D. in educational psychology from the University of Wisconsin in 1941. He has had a wide range of educational experiences including teaching and administration in both public and private schools on the secondary and college level. His journalistic background is extensive and includes articles and books treating teacher education, curriculum, and instructional materials.

Between man's technology and his human fulfillment there has always existed a long-range positive ever-expanding relationship. The readers of *The Circulator* are fortunate in the emphasis which *The Circulator* has given, implicitly and explicitly to technology as a humanizing factor. For the emphasis to be human it must focus not on the tools themselves but upon their human use; not upon knowledge alone but upon the use of that knowledge in a context of human values.

Education will always have its artistry, creation and discovery, but it is inevitable that with accumulated experience we make gains in instructional technology and the science of education. Education is the process of determining desired student behaviors, analyzing and sequencing the behaviors that lead to the desired performance, motivating the learner along this sequence, and providing him with feedback on the success of his efforts. Ideally we hope by this process to develop for the individual learner a discipline for continued self-direction. *Technology* applies a scientific approach to this undertaking. Technology connotes a degree of predictability, precise definitions of functions and operations, and reproducible perfomances.

In fact when humans perform repetitive non-judgmental tasks with complete predictability and precise reproduction, such behavior is considered dehumanizing if prolonged. Not fit for humans, the mechanical performances are assigned to machines. Obviously most tools and machines and production systems are built for just this purpose: to relieve a human from performing some routine, sub-human, mechanical, arbitrary chores. For judgment, flexibility, imagination, divergent behavior and empathy, the system will require a human element. The fact that a notebook, textbook, telephone directory, machine or electronic system can be constructed as a more fool-proof memory system than the human mind is NOT downgrading the human mind; instead, by use of such external storage bins, the mind can upgrade its selective recall, its forgetting and its restructuring of meanings. Thus the tools themselves are never the technology; the technology is the systematic predictable relationships that govern their development and use.

Technology *itself* is a human development. Without the human mind and will there would be no technologies. Thus technology must be viewed as a form of man's expression, as a continuous process in his becoming more human. This viewpoint, of course, makes several assumptions about human behavior and values — for example:

1. Man is a marvelously complex organism . . . with a balance of compulsions to maintain a degree of constancy while at the same time undergoing and supporting changes.
2. Man in his own way is a creator, a manipulator of his environment, a discoverer, a prober. From this viewpoint, the learner is pictured not so much as a *receptor* of information or teaching, but more as a manipulator or tester of that information or teaching.
3. The genius of man is that he *learns* by interacting with his environment, thereby gaining more control of his own potential and of the world around him.
4. Increasingly cultures employ a variety of strategies to "prepackage" much of their instruction by rigging the environment (e.g., a door is hinged and jammed so that it swings one way) and by "storing stimuli" in instructional materials (e.g., books, films, recordings).

Actually the "big ideas" of a discipline take on meaning through the learner's direct management of the tools and language of the discipline. It may seem trite but it is necessary to say that (a) the history of man is a reflection of tool development and technology; (b) education is largely tool using (including instructional materials); (c) curriculum planning is the art of rigging the tools and their consequences into units of meaningful experience; (d) and throughout the human factors loom large for motivation, student identification and satisfactions, student purposes and social action.

A positive approach toward tools and their technology may be easier for our students to learn than for us. For one thing the new curriculum movements give great importance to the learner's working directly to discover relationships using materials and equipment, much of which they make themselves. Because so many of the disciplines have had such an explosion of new information, usually made possible by new instrumentation, they quite naturally build their new courses of study around the materials and instrument. This is especially true of the curriculum reforms in mathematics, sciences, languages, geography, in which the subject matter specialists have found it necessary to produce new materials that call for much active participation by each learner.

Of special importance is the fact that recently so many developments are producing instructional materials or devices that can be student self-operated. In addition to books, there are the self-teaching kits, multi-level self-scoring materials, tapes and records and playback equipment and film loops and handy projectors for individual or small group listening and viewing, easily-operated video tape systems, etc.; and live telephonic and walkie-talkie systems to connect teachers with distant individual students.

The teacher's task goes beyond the mere use of the instructional tools or media. There must be evident appreciation of their revolutionary significance and an ability to relate the materials and media to appropriate learning tasks.

Also, it would seem important for teachers to analyze the development of tools and technologies and their influence on instruction. In fact, because so much of today's instruction is designed to include the stored stimuli in books and other instructional materials, many educators are convinced that the *fastest* way to change a curriculum and student learnings is to modify the instructional materials and things in the learners' environment.

Certainly the rate of change in educational media has accelerated. It took uncounted generations to develop writing, to change from stone to scroll, and to invent the marvelous random-access system of pages bound in books. Yet in one lifetime we have had the development of ratio, motion pictures, sound films, magnetic recordings, television, transistors, computers, high speed data processing. Many of our school children never knew a world without TV, atomic energy, jets, space ships, and instantaneous communication on a world-wide basis via outer space.

Because schools are typically conservative about innovations, some parts of our society view the

schools as costly anachronisms, way out of line with the technologies of our culture. Man has the know-how to track and redirect a missile in outer space; but the cumulative records of school children lack preciseness of target, definition of stages, visible continuity, prompt feedback and constant realignment for optimum learning.

The innovations, the increased school population, heightened interdependence, and continuing pres sures for efficiency can all be viewed optimistcially — like seeing a glass half-full instead of half-empty. Mathematically the increased school population gives us more students who are individually different in the same way; and thus it becomes economically feasible to mass produce and to organize for more individual differences and be prepared for them. This is like mass producing shoes in endless variety instead of cobbling each shoe *after* the customer arrives.

I believe that we are on the threshold of a monumental breakthrough in instructional environments in which learners will have the skills for self-directing their own learning by drawing upon every available kind of media and resource including their own teacher counselor and an orchestra of special teachers. The instrumentation that has opened this possibility is of course the cluster of inventions around the electron, transistor, high speed data processing and communication systems. The larger technology for individualism promises to subsume the lesser inventions of recorders, cameras, media and computers into one large organization of systems.

Teachers have always been concerned about individual differences; but usually the complete data about one's students was too overwhelming and unmanageable to render unique direction. The honest concern in the past for individual differences would keep getting bogged down for lack of ability to process effectively the individual need. Teachers must have new tools . . . for making data about the individual managable, . . . for *giving re-newed attention to the CLASS OF ONE.*

If educators at this time will insist upon *better behavior for each student* as the basis for innovation, we may have a true break-through. To have their voice heard they must not only be aware of the new technologies and tools, but must be critical users in actual practice of the innovations. Fortunately for Pennsylvania and the nation's schools, in Pennsylvania is some of the most imaginative and rigorous research into technology applied to personalizing the curriculum. For its is a truth that innovations change the lives of their users, and that usage gives direction to the innovation. In their use educators can accentuate the human dimension by making humanizing demands on technology.

NATIONAL SCIENCE FOUNDATION SPONSORS EARTH SCIENCE CURRICULUM PROJECT

Progress of Earth Science in the Curriculum

The Pennsylvania Department of Public Instruction instituted a statewide program of earth science in 1958. By 1962-63 the program had expanded from an original nine schools teaching 800 ninth graders to 550 schools offering earth science courses to 68,431; and the expansion continues. Much the same rate of ascendancy applies throughout the country where, according to the National Science Teachers Association, there are over 9,000 teachers of earth science courses.

There is every indication that earth science, which integrates astronomy, geology, meteorology, oceanography and map reading into a major curriculum area, is rapidly rising to the status of biology, chemistry and physics to become the fourth basic science subject at the secondary level. But, much of earth science course content also adapts to elementary levels and helps fulfill the NSTA recommendation that ". . . to be adequate a school science program must start as early as kindergarten and be articulated from one grade level to the next, through grade twelve. . . ."

The Earth Science Curriculum Project

One of the major indicators *and* stimulators of the growing stature of earth science in the curriculum is the sponsorship given it by the National Science Foundation through support of summer teacher institutes and the Earth Science Curriculum Project.

The Project, which is under administrative supervision of the American Geological Institute, was set up three years ago with a two-fold purpose: (1) to develop up-to-date teaching and resource materials for use in secondary science courses and (2) to improve teacher training in the field. More specifically, it was intended to produce a science curriculum that would fill the void found to exist at the ninth grade level.

Under NSF sponsorship, forty-one scientists, science educators and writers have worked together during the summers of 1964 and 1965 at the University of Colorado in Boulder to produce preliminary versions of an earth science textbook, correlated manual and laboratory materials — all to be evaluated, revised and re-evaluated before final preparation and release in 1967.

One of the major challenges has been to produce an integrated course in which students will achieve a broad understanding of the planet earth as a system, rather than be a series of disconnected units on astronomy, geology, meteorology, oceanography and other related subjects. For a course geared to the ninth grade level, it was particularly important that the textbook, manuals and laboratory equipment provide a basic comprehension of, and experience with, general scientific investigation methods.

Students using the contour kit as part of the Earth Science Curriculum Project. The kit is produced by the T. N. Hubbard Scientific Company.

The Project relies heavily upon laboratory materials to reinforce and vitalize the learning experience. More than twenty different laboratory demonstrations have been designed for use with the basic text and manual, titled "Investigating the Earth". Many of the items are unique and have been specifically designed and engineered to serve a number of different functions at a minimum cost. For instance, instead of a traditional world globe that would show only topographical features, the one designed by ESCP provides for exploration of the earth's surface — its interior and atmosphere — as well as relationships between the sun, moon, planets and stars. Nearly all items are flexible within the classroom situation and may be used for demonstration or student use in individual or small group activities.

Evaluation Materials Now Available

Examination copies of the ESCP text materials and specially prepared evaluation assortments of laboratory materials are now available. These materials may be used by schools not currently offering the ESCP course, but which are interested in reviewing the content for possible future addition to the curriculum.

Information regarding the text, laboratory materials and teachers guide for either evaluation or class use, may be obtained by writing Earth Science Curriculum Project, P. O. Box 1559, Boulder, Colorado.

LEARNING THROUGH PLAYING ROLES

The role playing or sociodramatic method of teaching is one of the most exciting and potentially productive approaches available to the classroom teacher. This method requires a minimum of teaching aids and materials — only some imagination and a bit of experience are necessary to produce a quality performance. The technique implements several basic principles of learning.

1. It requires the active involvement of the learner in the learning situation.
2. It promotes human interaction in real-life situations.
3. It is problem-oriented and leads to insights and solutions to problems of living.
4. It can contribute to social as well as intellectual development.
5. It is flexible and can be varied to fit the learning environment.

Sociodrama is first of all an "acting out" of problems which are of concern to the learners. In this "acting out" the students assume the identies of persons who are, were, or would be actually involved in the real situation. In this phase of the sociodrama the learners "project" themselves into the roles of other persons. This involvement should be unrehearsed and spontaneous — there is no script for a sociodrama.

During the role-playing, the participants, interact as they believe the persons they are representing would behave. Class members not in the sociodrama observe the scene, and, when appropriate, take part by raising questions and making suggestions. It is frequently useful to stop the sociodrama to provide an opportunity for the role players to make comments about the problem and their feelings toward it.

The sociodrama should be long enough to allow the situation to become "real" to participants and observers, but should not be permitted to last longer than the interest of the group. (We have used 2 minute "scenes" successfully, and rarely, if ever, exceeded 15 min.) The teacher must decide when the scene has served its function.

The post analysis is a vital part of the method. It is here that the whole class makes an analysis of what has happened, how the "actors" played their roles, and what solutions, if any, might be employed to resolve the problem presented.

The analysis also sets the stage for replaying the scene. That is, from discussion of the dynamics operating in the sociodrama, new ways of behaving may be suggested; then new roles should be "acted out" to demonstrate their effect.

Various steps can be used successfully in producing a sociodrama. The following, however, are usually included, perhaps in a modified form, or in a different sequence.

1. Class discussion should lead to the recognition of a problem in which the class is interested.
2. The problem should be described giving special attention to the people involved and the roles taken by them in the problem.
3. After roles have been identified, the teacher should ask for volunteers to act out the roles. (Teacher selection of role players may be necessary in some instances.)
4. The situation is described once more to the class. Attention should be directed to the roles and interrelationships acted out.
5. The situation is acted out.
6. The class analyzes the sociodrama looking for clues to a solution to the problem and other implications of the roleplaying. The roleplayers themselves should be encouraged to participate in the analysis.
7. The sociodrama may be replayed, perhaps with different actors, or the same actors assuming different roles.

Three important keys to the successful use of sociodrama include:

1. The degree of interest the problem holds for the class.
2. The degree of spontaneity achieved in the roleplaying.
3. The extent to which the class participates in the analysis of the sociodrama.

Many teachers use roleplaying at all levels of teaching and learning; management training programs in industry invariably include this technique. Much has been written about the approach; we suggest the following references because we have used them and found them helpful:

Zeleny, Leslie D. "How To Use Sociodrama" Bulletin No. 20 National Council for the Social Studies. (Selected bibliography included)

Jennings, Helen H. "Sociodrama as an Educative Process." *Fostering Mental Health in Our Schools* 1950 Yearbook Association for Supervision and Curriculum Development.

Grambs, Jean D., and Kinney, Lucien B. "The Sociodrama in High School Classes." Social Education 12:341-43; December 1948. (A good analysis of the steps in sociodrama and an example of its use in dealing with a local issue.)

Gross, Richard. "Role-Playing in Current Events Instruction." Civic Training, November 29-December 3, 1954.

EDUCATIONAL TECHNOLOGY IS A PRACTICAL REALITY

Today's most significant development in education is the *instructional system* which links teachers, students, programs and machines to provide an optimum learning situation.

Basically there are two kinds of instructional systems: the Learning Laboratory, a self-contained unit which serves a single classroom . . . and the Learning Center, an instructional network which can serve a building, a campus, a school district, or an entire state.

As concepts, "Learing Resource Centers," "Electronic Classroom," and "Instructional Electronics" are not new. They have been discussed, described and detailed frequently in recent years.

Educators have recognized the potential of these concepts, and progress has been made toward implementing them. A number of Learning Resource Centers have been installed, but few have been planned as complete, *fully integrated systems.* Herein lies the key to the successful application of new educational technology to achieve the twin objectives of more effective teaching and more effective dissemination and assimilation of information.

The fundamental concept of the Learning Resource Center is to make knowledge readily accessible, utilizing the full spectrum of media — print, voice, film, tape, records, graphics, television, radio. The audio, visual and video equipment complement required to handle this centralized information storage/retrieval function is already available. Much of the instructional materials programs are also developed and ready for use in the Learning Resource Center. And, because of recent technological advances, particularly in electronic processing and distribution equipment these individual components can be combined into efficient, integrated systems at far lower costs than ever before possible.

The strength of the Learning Resource Center is that it affords educators the opportunity to make maximum use of creative teaching talents. The best teaching skills and resources can be made available on a virtually unlimited basis to all segments of the school system. Through the Instructional Electronic System, their skills and talents are available on call at any receiving point in the system and at a time convenient to the viewer/listener as often as necessary.

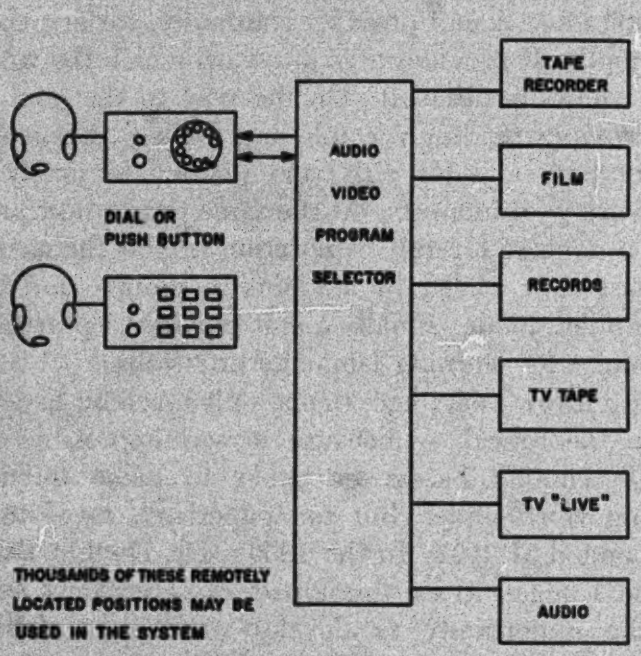
Viewing/listening points may be located anywhere within the campus facilities, in classrooms, auditoriums, learning laboratories, study halls, etc. Outlets may even be located in dormitories to permit make-up, review, or accelerate learning by gifted students.

Properly managed and creatively programmed, the Instructional Electronic Learning Resources Center holds the promise of unfettering education from the limitation of traditional methods while at the same time aiding teachers in materially upgrading the quality of instruction. The learning process, too, will be enhanced, since students will have instant access to a multiplicity of information sources.

Learning Centers and Instructional Electronic Systems, whether simple or complex must be planned from the beginning as a *system*. The hardware must be considered on the basis of its ultimate use in the total *Instructional Electronic System*. It must be compatible and matched with the other components that will be added later.

The "building block" design approach permits the educator to make his initial Instructional Electronic System as simple or as extensive as required, or as available funds permit. Additions and expansions of the system can be made later *without obsoleting the initial equipment investment*.

DIAL SYSTEMS PERMIT EXPANSION OF NUMBER OF SOURCES AND CONNECTIONS



The dial system permits simpler wiring, more program sources, and a larger number of receiving locations. The system has far more flexibility, and video can be readily added when required.

R.C.A. has published a booklet which illustrates the comprehensive array of equipment as well as the capabilities which are available for every type of instructional electronic system or learning resource center. To secure this booklet, Advanced Educational Technology, #ETV-784-1, which includes a prospectus and sections on instructional system elements and typical equipment write to R.C.A. Instructional Electronics, Building 15-5, Camden, New Jersey 08102.

LILACS AND FIREWOOD: A PRODUCER LOOKS BACK

BY LUTHER F. KEPLER, JR., Production Supervisor, Division of Broadcasting, The Pennsylvania State University.

The man's voice on the other end of the telephone came through with a discernible quake, and was somewhat choked with emotion. I am a production manager of a new educational television station, which has been on the air barely two months, and so I listened to the voice with increasing interest.

"Walking across the campus to my office this morning," he said, "I passed some splendid stands of lilacs. They were not yet in full blossom. Whether it was the freshness of the spring morning or not, I don't know, but as I passed by those lilacs, my thoughts began to dwell on Walt Whitman's famous elegy, 'When Lilacs Last In The Dooryard Bloom'd.' And as these thoughts developed further, it suddenly occurred to me that it was very nearly one hundred years to the day that the tragic event took place which occasioned the writing of this famous poem about the assassination of Abraham Lincoln.

"By the time I reached my office the significance of the date had become so apparent that I decided to call you and pass along the idea — for whatever it's worth."

The man on the phone was Professor Henry W. Sams, head of Pennsylvania State University's Department of English, and with these words a television show was born. Although weeks of intensive, back-breaking work were to follow, and weeks of frustration, uncertainties, and second thoughts on the wisdom of committing a new station, new staff and new production equipment to such an experimental undertaking, the project labored steadily on until a show was, indeed, born.

The WPSX-TV production of "When Lilacs Last in the Dooryard Bloom'd" is an example of experimental TV drama. At least two factors contribute to this. First, poetry on television is about as common as alligators in Alaska. Occassionally one is treated to the rarity of a Richard Burton reading Dylan Thomas, or an aspiring poet reading his own work on CBS's "Camera Three" on Sunday mornings. But generally reading poetry has remained confined to universities, colleges, and private gatherings. Therefore, *any* presentation of poetry on television must be treated as experimental production.

The second reason that the program is experimental concerns technique or treatment. Once the decision has been made to produce a piece of poetry for TV, the producer must ask himself, how will it be presented? How shall it be styled? How will it be mounted? In fact, he asks himself all of these ques-

tions. While the decision to produce may be a bold one, and while the producer might envision himself as a kind of crusader who carries a lance of goodness into the black pit of ignorance from atop a charging white stallion, if he is stupid enough not to ask himself these questions and reflect on them thoughtfully, then his galloping steed might very well lose its footing and carry them both into the abyss of failure. The only thing which fails more completely or abominably than an incompetently produced television drama is an incompetently produced dramatic reading of a piece of poetry! The viewing public, knowing or not, has to come to recognize technical excellence, good acting, and professionalism; it will not tolerate shoddy workmanship or amateurism. The fact that a production is "educational" does not excuse it from being boring. The show has got to move. It is not enough to simply produce that-which-has-not-been-done-before. The produet can be experimental, but it must also be interesting to the person viewing it in the home! The difficulty is to achieve maximum public interest without compromising educational objectives. Has the producer succeeded? He must allow the viewers to judge that for themselves.

So, if some winter evening while sitting before your television set there suddenly appears on the tube a dramatized reading of Whitman's acclaimed Lincoln elegy, and after thirty minutes, you find that you have been completely absorbed, that the experience has provided some insights not only into the poet, but also into the man about whom it was written, then the producer's efforts were not in vain. If you've switched to another channel, turned off the set, and/or swung your chair around so you could ponder more important thoughts before the glowing fire, then not only were the producer's efforts in vain, it probably points up that he should give up the masquerade and turn to things more closely allied with his actual abilities.

Chopping fireplace wood, for instance!

WHY THEME-UNIT TEACHING WORKS

BY DR. STEPHEN DUNNING, University of Michigan
Supervising Editor, Scholastic Literature Units

The student becomes vitally interested when the subject matter of the course stems from his own most serious concerns.

The student from 12 to 16 is becoming aware of who he is. He is learning how he differs from others. He is feeling the first pressures of adult responsibilities. As he matures, the student accumulates ideas, questions, fears, hopes. He admires heroes. He craves action. He dreams of how he will react in crises. In this welter of thoughts, the teacher recognizes age-old themes — the concern for man's relationship to other men, the response to crises and tests of endurance, the need for a code of living, the love of adventure and laughter, the drive toward progress, the search for ideals and for success, and the quest to know one's self.

When these themes are the acknowledged subject matter of the course, the student must be interested, for these are his own deepest concerns. He finds that in the context of these themes, reading, writing, speaking, and listening have a purpose: to extend knowledge of the theme — and, therefore, to widen the student's view of himself and his world. At this point language arts becomes explicitly a way of learning to understand life and to act on this understanding.

These themes give vitality and meaning to communication skills and in this context a student is quick to learn not only the ideas but also the business of communication: the grammar, the speaking and listening skills, the vocabulary, the literary terms, the logic, and the techniques of composition — everything, in short, that will help *him* communicate his important ideas.

These are the reasons for teaching by themes. But a theme remains abstract until worked into a planned teaching *unit*. A unit provides continuity, variety, context, depth. It provides a goal toward which the work of six weeks is directed. On the way to the goal, a unit provides reading for able and for less able readers, for boys and for girls, and reading to satisfy a wide variety of interests. At the same time a unit provides a context for full exploration of the theme by the class as a whole, by students in groups, and by each student alone. Finally a unit provides a purposeful context for learning language arts skills.

Until a few years ago, theme-unit teaching had to remain theoretical — because it was impossible to compile enough hardcover books to make theme-teaching worthwhile. But the paperback revolution has changed all that. In the 1950's, Dr. Dwight Burton and I began to see the impact of paperbacks and saw the opportunity to develop themes *in depth* through reading many different books — complete books, instead of the excerpts and abridgments so often found in hardcover anthologies.

We proposed our idea for a marriage between theme-units and paperbacks to Scholastic Book Services — the people who we felt knew the most about paperbacks in the schools. We showed Scholastic our Teacher's Notebook, which describes how a Unit develops day by day for six weeks. COURAGE, the first Scholastic Literature Unit, was born in 1960. Now there are twelve units — a complete program in theme-unit teaching with an effective grade range of 6-12. Our program has clearly met a need: there are now Scholastic Literature Units being used in thousands of classrooms throughout the country.

WHEELS MOVE BETTER THAN BLOCKS

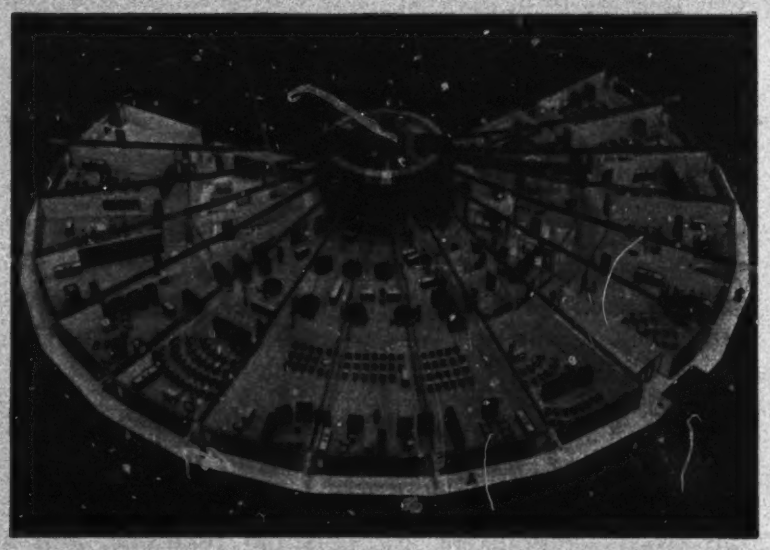
The Douglas MacArthur school shown below tends to refute the oft-heard cliche that "the future is just around the corner." In school architecture and construction the future is already here.

This revolutionary round school is not simply the result of somebody's idea of how to be different. It is a carefully designed learning environment planned to accommodate curricular innovations and to utilize the contributions — both present and future — of modern technology in educational practice: All this at less than $14.00 per square foot.

The architects and builders, understandably enthusiastic, offer the following description of their product:

> ". . . a completely controlled environment electronically wired for complete programming, air-conditioned and ventilated like a bacterial laboratory, electrically heated and acoustically floored . . . an environment to meet and greet changes . . . changes in educational programs and curriculum, changes in educational equipment and communication systems, a place to move ahead or retrench at will . . . a mutable environment for learning — now and in the future!"

If it looks interesting to you, you may obtain additional details from the H. F. Campbell Company (Builders) Detroit, Michigan, or from the St. Cyr Architect and Associates, Inc., Livonia (Detroit), Michigan.



The Douglas MacArthur School, Southfield Public Schools, Southfield, Michigan.

CHANGED ROLES FOR TEACHERS AND PRINCIPALS

The following article presents the major ideas from a prepared paper by J. Lloyd Trump, Associate Secretary, National Association of Secondary-School Principals, Washington, D. C. The complete context of this article may be secured by writing to the editor of The Circulator.

"Innovations — such as team teaching, independent study, large-group instruction, small-group discussion, flexible scheduling, use of teacher assistants, and the application of newer technical aids to teaching and learning — are all around us.

"Most of the changes suggested earlier in this century — *e.g.*, the activity movement, a variety of content revisions, educational radio, many audio-visual aids, work experience, core or common learnings, increased attention to individual differences among learners, citizenship education, and many others — never *really* got into the basic fabric of American schools because of the way education was organized and the manner in which teachers taught. These proposals could not pierce effectively the barriers presented by the trite conventional concepts, none of which is supported substantially by educational research.

"However, we know *now* how to overcome the barriers of the educational setting. Actually, it is relatively simple to organize a school differently. Curriculum content can be arranged logically in a non-graded, continuous progress sequence. Teachers can work in a variety of types of teams to break the isolation of the self-contained classrooms. Rigid time divisions are easily replaced by flexible schedules; some schools even make up their schedules daily or weekly. Students can easily be regrouped into classes of 100 or more for some purposes and into other classes of 15 or fewer for different activities. Pupils can also be scheduled for extended periods of time into resource centers for independent study. Teachers can use clerks, instruction assistants, and technical devices effectively.

"All of these modifications are occurring in schools. Although it takes knowledge and courage to make the changes, the big problem lies elsewhere. The challenge is for teachers to learn new instructional roles to go with the changes. Unless they learn these new roles, their teaching and the pupil learning will be little better than that reported in a recent, very provocative document entitled, *The Junior High School We Saw*, A.S.C.D., Washington, D. C., 1964.

"Team teaching, large group instruction, small group instruction, and individual instruction illustrate some of the changed roles that are needed.

"Team teaching is a cooperative activity in which each person does what he is most able to do in the instructional system. Cooperation is a new teaching role for many persons. A teacher recognizes that a colleague, a film, a programmed instruction device, or even some person outside the school may perform some part of the teaching process better than he. Certainly a team does *not* simply rotate activities among the members. A teacher learns to give up some things he did alone in the self-sufficient classroom.

"Large-group instruction serves three basis purposes: motivation, dissemination, and assignment. So far as *motivation* is concerned, the teacher needs to select very carefully that content which will interest most of the students regardless of ability and past appeal to them. Sometimes the presentation is better done by someone else in person or on a film or TV program. Teachers must remember they are *not* to *cover the subject* in LGI; that is done by students in their independent study. The teacher provides *only* content that specially appeals to students and makes them *want* to learn more. The presentation is enlivened by careful selection of content and by the use of audio-visual aids. Illustrative symbols are more stimulating visually than too many words. The teacher avoids individual questioning of students, but elicits group responses from time to time.

"*Dissemination* in LGI calls for presenting ideas, models, or demonstrations not readily available to students elsewhere. Teachers learn to avoid repeating content from student textbooks or from films seen by all.

"The LGI *assignment* tells students what they are expected to cover in the course, when they are to cover it, what materials are available and where they may find them, and how students can know immediately how well they have learned. Beyond this minimum assignment expected of all, there are additional directions for more able and more highly motivated students.

"Small-group discussion (SGD) also requires new roles for both teachers and students. Teachers need to avoid the oral quizzing erroneously called discussion in conventional classes. The purpose rather is to teach students how to communicate with each other and to respect each other in the process. The necessary role is that of teacher of process, consultant, and evaluator. The teacher enters the discussion to correct gross errors ,to help point up issues, and to assist the group in self-appraisal. Pupils also are made aware of the variety of group roles that they play. Group membership is changed periodically to facilitate the learning process.

"The heart of the school is independent study (IS) for here is where students learn how to learn and develop personal responsibility for learning. The goal of the teacher in his relations with his students is to become *dispensible,* as quickly and as completely as possible. Students need the desire and the skills to "go it alone." Teacher assignments made in LGI keep these goals in mind. Unless teachers also change their roles regarding IS, there is little need for flexible schedules, technical devices to aid learning, or new learning resource centers.

"Teachers planning IS activities need to give precise and understandable instructions to students on what knowledge and skills are "essential," "desirable," and "enriching," and how the students can reach those goals — through reading, writing, listening, viewing, discussing, and working with equipment. Therefore, teachers not only analyze and organize the curriculum differently from the practices in conventional classes, but also they develop *guidesheets* and *worksheets* for pupil self-direction and reference. Those instructions call for a wide use of learning resources — not merely reading books and filling in blanks.

"Teachers also need to suggest special projects, to stimulate creativity, and to encourage individuality by students who go beyond the minimum essentials. The conventional teacher role emphasizes and rewards conformity. The *new role* emphasizes creativity and individuality; and conformity only insofar as basic knowledge and skills are concerned.

"Today's evaluation of pupil progress rests on tests which are fundamentally a competitive guessing game between teachers and pupils. The teacher's new role is to make evaluation a more integral part of the teaching-learning process. Many tests are filed in the resource centers to be given by the assistant to students on request. The answers also are there so immediate self-appraisal by students is possible. Periodic control tests are given in large groups and graded by teachers and assistants. The results are accurately reported to students and parents separate from other factors of pupil growth. This report is a factual accounting of what a student knows or can do — related to what he knew or could do at the previous reporting period.

"Separate evaluations report the frequency and quality of oral communications in discussion groups, the use of human and material resources in independent study, changes in interpersonal relations, and a number of other growth factors carefully observed by teachers. These data also are reported to students and their parents.

"In all evaluation the emphasis is on individual accomplishment in reference to the pupil's own past

record rather than on comparisons with his peers — although such data are available for use when needed. Teachers learn to treat students as individuals *rather than* as members of a low ability or high ability group.

The school we *might* see would be a very different place from *The Junior High School We Saw*, if teachers change their roles along the lines suggested here. The changes we have listed are only illustrative of many that are required if team teaching, flexible schedules, LGI, SGD, IS, and other innovations in schools show positive results in pupil learning.

FILMS FOR IN-SERVICE TRAINING

As a result of the expanded educational programs of the federal-government, it is important to have adequate audio-visual material for workshops and institutes. The five color and sound motion pictures described below have been produced especially to demonstrate various audio-visual media and their effectiveness in the classroom. These films show expert teachers in action, emphasizing the use of teaching techniques combined with simple instructional materials to bolster basic teaching methods.

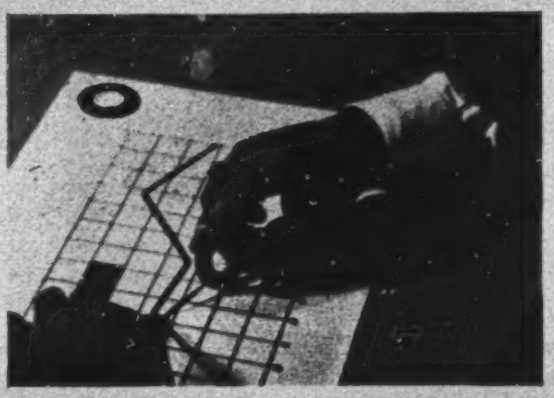
Globes: Their Function in the Classroom

Designed to motivate teachers to make better use of globes in the classroom, this film shows many types of globes, illustrating their specific uses in situations ranging from primary grades through high school. The film stresses the importance of following a graded globe program, and of correlating globes with appropriate flat maps. Starting with eight-inch readiness globes in the primary grades, students progress to globes which gradually present more detailed information. Globe mountings, scales, and legends are discussed.

"Globes: Their Function in the Classroom" shows many different types of globes and how they may be used in the classroom for more effective teaching in elementary and secondary grades.

Charts for Creative Learning

Whether charts are purchased or made by teacher and/or students, they serve an important role in presenting information to the class. Charts should be bold, clear, and direct, providing quick clarification or emphasis when needed. Charts can be made from a variety of materials, can be hung or supported by a number of devices and can be designed with many kinds of inks, paints, crayons, lettering sets, and pictures. This film demonstrates methods of planning and making charts, then shows numerous situations in elementary and secondary classrooms where charts are being used.



Teachers are encouraged to use many kinds of charts by the film "Charts for Creative Learning," which also demonstrates ways of making charts easily and inexpensively.

Flannel Boards and How To Use Them

The first sequence shows how flannel boards provide a means for arrangement and rearrangement of illustrations, a logical sequence of presentation, the use of 3-D build-ups, the use of animation and action, and the advantage of quick, easy-to-make, economical visual aids. The second section shows what flannel boards are, pointing out several ways to make simple ones. The third sequence explains materials that will stick to flannel boards and offers ideas for devices that can be made by teachers. In conclusion, the film demonstrates different uses of flannel boards in classroom situations ranging from kindergarten through college.

In "Flannel Boards and How to Use Them" many ways to make quick and inexpensive flannel boards and materials are suggested as viewers are urged to use their own creative ideas.

Chalk and Chalkboards

This comprehensive film introduces the physical properties of chalk and chalkboards, showing what they are made of and how they should be cared for. It treats at length many techniques which can be used on all grade levels to improve everyday teaching. Laboratory and classroom demonstration sequences show that the chalkboard is a particularly effective teaching aid because it is readily available, it allows illustrations showing action, helps develop explanations in logical sequence, can involve student ideas, will focus attention upon specific points, permits group participation, and is adaptable to a wide variety of uses.

"Chalk and Chalkboards" demonstrates proper care of chalkboards, explains how simple accessories can be made and used to improve teaching techniques, motivates teachers to discover new chalkboard methods.

The Film and You (Using the Classroom Film)

The film opens as an elementary school principal points out ways in which a teacher can make her work more effective by utilizing instructional aids. To show how the motion picture plays its unique role in the classroom, he introduces us to a sixth grade teacher who is about to show the film *Swedish Family Story* to her class. We see how the class is prepared for the showing; and afterwards, how the full value of the film is enhanced and retained through a variety of follow-up activities. Emphasized is the importance of having proper background enrichment materials in the classroom.

The above films may be rented from Bailey Films, Inc., 6509 DeLongpre Avenue, Hollywood, California 90028 at the rate of $8 per film, except charts at $6, and chalkboards at $10. For regional rental at lower rates—write to Pennsylvania State University, Audio-Visual Library, University Park, Pa. 16802.

Area Six Schools
(Events, Projects, Views)

THE INDEPENDENT STUDY COURSE IN LITERATURE: RESULTS AND IMPLICATIONS

BY DAVID C. LAUBACH, Loyalsock Township Junior and Senior High School. Mr. Laubach is at present chairman of the English Department and director of dramatics at the Loyalsock Township Junior and Senior High School, Williamsport, Pennsylvania. He holds Bachelor's and Master's Degrees in English from the Bloomsburg State College where he specialized in poetry and drama of the English Renaissance. Mr. Laubach is a part-time instructor of English at Lycoming College, theatrical director of Somerhill (a summer experiment in the arts) and assistant chairman of the Lycoming County curriculum study in English. This summer, he will serve as director of workshops for an N.D.E.A. Institute at the Bloomsburg State College. In the article below, Mr. Laubach describes his reactions to an experimental literature course.

For the past semester, twenty-four selected juniors from the Loyalsock Township Senior High School have been studying literature independently. These students are participating in the experimental phase of *The Independent Study Course in Literature* written by Dr. Edward Partridge, Bucknell University and supervised by Mr. William Dallam, Curriculum Planning Specialist in English, Pennsylvania Department of Public Instruction.

This course, which will be made available to all schools in the state if the results of the experiments are favorable, is designed for the gifted student who can profit from an organized approach to literature. The rationale is based on the *Taxonomy of Educational Objectives* edited by Benjamin Bloom. Mr. Bloom's theory of learning when applied to literary study moves from a consideration of specific detail to analysis, synthesis, and finally evaluation. The student is provided with a study guide which moves him slowly through the work in question by means of a short introduction and leading questions. This opening portion of each unit, if followed correctly, will force the student to observe significant detail and to analyze important ideas. The writing assignments which complete each unit allow for synthesis of discoveries and measured evaluation of the work, which calls for judicious textual support.

As each unit follows the design of moving from the specific to the general, so too the entire course is based on obtaining a sound understanding of fundamental techniques before attempting more ethereal concerns. The first nine units of the course are devoted to the elements of a literary work. Discussed

in detail are such terms as archetype, motif, point of view, structure, and theme. Each of these terms is defined in relation to a single work. Poetic terms such as metaphor and symbol are defined in relationship with certain selected poems. After the first nine units (certainly a full semester's work) have established the fundamental tools, the course goes on to discuss the major genres in the final nine units using one representative of each genre: *Hamlet*, tragedy; *The Odyssey*, epic; *The Catcher In The Rye*, novel.

In our case, I believe that the course is working well. We are able to schedule all of the students into a single class. They take their regular junior course in American literature and use the units dealing with major works in place of the required monthly book report. After the writing assignments for the units are collected, we take several days to discuss them and to air reactions to the work studied. Through these discussions, the student is able to share his ideas with his classmates and profit from a comparison of various reactions to a single work.

I believe that the course is sound enough to be used with good results in any school in the state. At Loyalsock High School, the junior year is the most logical place for the course since it will prepare the able English student for our college-level advanced placement world literature course which as offered in the senior year. Other schools may find the course valuable at a sophomore or senior level or indeed with selected students from every grade level of the senior high school.

As Mr. Dallam has pointed out, the course attempts to apply the logical approach to learning, so inherent in such disciplines as mathematics and science, to a subject which seems to defy and sometimes to destroy logic — imaginative literature. Whether used to replace that most misused and in my opinion most worthless tool of the Eiglish teacher, the unstructured book report, or to serve as an entire year's study in English, the *Independent Study Course* may provide the able English students of our state with an understanding of English.

Mr. Laubach and several of the students involved in the Independent Study Courses in Literature.

Aids and Ideas

GENIUS AT WORK

The U. S. Department of Commerce recently announced its fourth publication in a continuing series designed to increase understanding of the private enterprise system.

The booklet "Patents: Spur to American Progress," focuses on the functioning of the system — outlining its purpose and practices, charting the how-to path to patents, and illustrating how the patent system facilitates discovery of new data and devices on which the American partnership of invention, industry, and the public build prosperity.

For copies of "Patents," at 25¢ per copy, write to: Superintendent of Documents, Government Printing Office, Washington, D. C., 20402. Payment must accompany orders.

DO YOU AGREE?

". . . A curriculum should be prepared jointly by the subject-matter expert, the teacher, and the psychologist, with due regard for the inherent structure of the material, its sequencing, the psychological pacing of reinforcement, and the building and maintaining of predispositions to problem solving. . . . It must be tested in detail . . . to assess not simply whether children are 'achieving' but rather what they are making of the material and how they are organizing it."

By Jerome S. Bruner, professor of psychology, Harvard University in his most recent book *Toward a Theory of Instruction*, Harvard University Press, Cambridge, Massachusetts. 176 pages, $3.95.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF PUBLIC INSTRUCTION

LOCK HAVEN STATE COLLEGE
Lock Haven, Pennsylvania 17745

Non-Profit Org.
U. S. POSTAGE
PAID
Permit No. 92
Lock Haven, Pa.

NEW MOVIE ON BASIC ECONOMICS

THE CASE OF THE CLOSED GATE, 16 mm. B. & W. 17 minutes. National Schools Committee For Economic Education Inc., 51 East 42nd Street, New York, N. Y. 10017. Rental: $5 per day, Sale $75.

The story is based on the "Mr. Both Comes To Town" presentation in the New York World's Fair Hall of Free Enterprise and involves the family of a worker in the Our Town Shoes factory, largest employer in the community, which has just shut down. Mr. BOTH who, like everyone else in the world, contains within himself two personalities — the CUSTOMER and the PRODUCER, explains the basic inner conflict between these two personalities. He compares the costs of Our Town Shoes with those of the competitor. He demonstrates the importance of good tools, efficient people, and the priceless element in our economy — freedom. He shows that "job security" is really "customer security" — no customers, no jobs — so job security becomes a matter of cooperation among all interested elements to get and hold customers. He departs on an optimistic note of opening the factory gates tomorrow because a plan is being worked out to which management, workers, stockholders, bankers, retailers and customers will all agree. The film is a "soft sell" exposition of the basics under-pinning the free enterprise system and is objective in its approach to Customer, Worker, Employer and Stockholder. Like the other ten films in the HOW WE LIVE IN AMERICA series this movie is designed to stimulate discussion and therefore the conclusions and answers to the problems are left for the audience to work out.

It is a stimulating and effective teaching aid which does not require any training or background to handle. It is accompanied by a thorough Teacher's Guide developed for teachers in Grades 7-9 which contains a wealth of ideas for discussion leaders in employee and community groups. A supplementary envelope contains five printed pieces further explaining the major economic points made in the film. The program was sponsored as a public service by Kentile Floors, Inc.

A COMPILATION OF PROGRAMMED LEARNING INFORMATION MADE AVAILABLE

The best current publication intended to encourage the selective and proper use of programmed learning or instruction is *Programmed Learning, A Bibliography of Programs and Presentation Devices* by Carl H. Hendershot, copyright 1965. This bibliography lists the programs by subject and publisher, and includes a section on presentation devices. The listing contains program titles at all grade levels and in most categories of subject matter including art, business, communication skills, economics, foreign language mathematics, music, political science, social studies, and science.

This publication may be ordered from The National Society for Programmed Instruction or C. H. Hendershot, 4114 Ridgewood Drive, Bay City, Michigan 48707 at the cost of $13.00 for the hardback binder with supplements through October 1965.

IRS MAKES TAX TEXTS AVAILABLE

The Internal Revenue Service has recently made available for the first time a 33 page "textbook" prepared especially to help students learn about their responsibilities as taxpaying citizens.

This handbook includes background material on the U.S. tax system and presents tax problems for students to solve. It uses a format that will appeal to the interests of high school students and it is written in a highly readable manner. It should motivate as well as inform the student in the area of citizenship responsibility.

The contents of the text includes "Taxes and You," "Taxes and Our Nation's History," "Taxes and the Federal Budget," "Filing for a Refund When Income is Less Than $600.00," and six additional sections on filing and computing tax forms.

"Teaching Taxes" is available from the Director, Training Division, Internal Revenue Service, Washington, D. C. 20224. Ask for "Teaching Taxes" IRS Publication No. 21 (Revised Dec., 1965).

VOLUME II, NO. 8

MAY, 1966

EDUCATION IS...

ESTABLISHING PRIORITIES FOR THE SCHOOL

A BALANCED PROGRAM

RESEARCH, EXPERIMENTATION, INNOVATION

SELECTING CONTENT

ORGANIZING CONTENT

TEACHING ABOUT CONTROVERSIAL ISSUES

ORGANIZING THE SCHOOL AND THE CLASSROOM

MATERIALS, TECHNOLOGY, SPACE

ORGANIZING THE CURRICULUM

DECISION MAKING

THE CIRCULATOR

AREA SIX COORDINATOR: C. H. LARSON

EDITOR: E. M. NUSS, D.Ed.

From the Editor

FROM THE EDITOR

Just as most of you are currently involved in an assessment of your past year's program, we, too, are making a close study of *The Circulator* — its history and future.

Evaluation, whether of an instructional program or a publication, is essentially a matter of determining, in light of objectives, how much progress has been realized, how this progress came about, and how progress can be increased in the future. Thus the primary purpose of evaluation is future improvement.

The Circulator is published and distributed in the interest of curriculum development. Its function is to bring ideas and references relevant to curriculum, and in particular instructional media, to teachers and administrators. Through this function it is hoped that ideas, materials, and programs will increasingly find their way from the experimental lab and the marketplace to the classrooms of the schools in Area Six.

These were the objectives. How much progress was achieved? Only you have the answer, but we would like to hear from you. To tell us how you feel about *The Circulator*, you need only complete one or both of the cards inserted opposite this page and drop it in the mailbox. And if you do, thanks.

Instructional Media

(New Ideas, Methods, Research)

SELF-DIRECTION — WHY AND HOW

Educational Leadership, the journal of the Association for Supervision and Curriculum Development, adopted for its 1965-66 theme: "Humanizing the School." Appropriately, the February 1966 issue is devoted to the topic "Toward Self-Direction." Included in the issue are five theme articles treating various aspects of the problem, how to promote self-direction.

We heartily agree with ASCD (and others) on the importance and urgency of this problem. First, because educators have for a long time recognized the need to develop self-direction as a personal characteristic essential to democratic citizenship; second, because in more recent years, the behavioral scientists have shown the intrinsic value of self-direction to human fulfillments; and, thirdly, because the technological era we are entering requires more than during any other period of modern history the assertion of human individuality.

To illustrate the direction suggested by the ASCD, we include below selected excerpts from and reactions to one of the theme articles, "Fostering Self-Direction" by Arthur W. Combs, Professor of Education, University of Florida, Gainesville.

Dr. Combs believes that when schools fail to produce self-directed citizens, the entire society suffers. In view of the nature of change the world is experiencing" . . . we cannot hope to teach each person what he will need to know in twenty years. Our only hope to meet the demands of the future is the production of intelligent, independent people."

Further, he feels that much of the curriculum of today's schools is ridden with practices which produce conformity, rather than self-direction.

> "Preoccupation with right answers; insistence upon conformity; cookbook approaches to learning; overconcern for rules and regulations; preoccupation with materials and things instead of people; the solitary approach to learning; the delusion that mistakes are sinful; emphasis on memory rather than understanding and content details rather than principles."

May, 1966 **Vol. 11, No. 8**

The Circulator is published monthly, September through May, by The Lock Haven State College Curriculum Center, Lock Haven, Pennsylvania. The Pennsylvania Department of Public Instruction cooperates with the College to subsidize the costs of the Newsletter. *The Circulator* is distributed, without charge, among the schools of Curriculum Area Six.

DPI Bureau of Curriculum Planning
Donald M. Carroll ..... Director
Ernest J. Rookey ..... Field Director

Lock Haven State College
Dr. Richard T. Parsons ..... President

Curriculum Area Six Coordinator
C. H. Larson, Jr.

Circulator Editor
Dr. Eugene M. Nuss

The writer is more than simply critical, however, for he makes several specific suggestions for schools that want to produce students who are more self-directed.

1. *"We Need to Believe This Is Important.* If we do not think self-direction is important, this will not get done. . . .

"To be effective as an objective, each of us must hold the goal of self-direction clear in our thinking and high in our values whenever we are engaged in planning or teaching of any kind. . . .

"To begin doing something about self-direction we must, therefore, begin by declaring its importance, not as lofty sentiment, but as an absolute essential. It must be given a place of greater concern than subject matter itself, for a very simple reason: It is far more important than subject matter. . . .

2. *"Trust in the Human Organism.* Many of us grew up in a tradition which conceived of man as basically evil and certain to revert to bestial ways if someone did not control him. Modern psychologists tell us this view is no longer tenable. From everything we can observe in humans and animals the basic striving of the organism is inexorably toward health both physical and mental. . . .

"The organism is not our enemy. It wants the same things we do, the achievement of adequacy. Yet alas, how few believe this and how timid we are to trust our students with self-direction. . . .

"Responsibility and self-direction are learned. They must be acquired from experiences, from being given opportunities to be self-directing and responsible. You cannot learn to be self-directing if no one permits you to try. . . .

3. *"The Experimental Attitude.* If we are going to provide young people with increased opportunity for self-direction, we must do it with our eyes open *expecting* them to make mistakes. This is not easy, for the importance of "being right" is in our blood. Education is built on right answers. Wrong ones are regarded as failures to be avoided like the plague. . . .

"People too fearful of mistakes cannot risk trying. Without trying, self-direction, creativity and independence cannot be discovered. . . .
"Autonomy, independence and creativity are the products of being willing to look and eager to try. . . .

4. *"The Provision of Opportunity.* The basic principle is clear. To produce more self-directed people it is necessary to give more opportunity to practice self-direction. This means some of us must be willing to give up our traditional prerogatives to make all the decisions. Education must be seen, not as providing right answers, but as confrontation with problems; not imaginary play problems either, but *real* ones in which decisions count. . . .

"The basic belief of democracy is that when people are free they can find their own best ways. Though all of us profess our acceptance of this credo, it is distressing how few of us dare to put it to work. . . ."

In view of Dr. Comb's assertions and recommendations, we wonder if the ASCD theme might not serve as an appropriate and effective objective for next year's in-service program. Should self-direction be increasingly fostered by the schools? Is it?

SOME SUGGESTED USES FOR THE OVERHEAD PROJECTOR AS A TEACHING TOOL

The following discussion of uses of the overhead projector was prepared for **The Circulator** by a member of the staff of the American Optical Company which specializes in the production of high-quality projectors. For further information about the products of the American Optical Company, write: Mr. Alfred J. Coscia, Philadelphia District, American Optical Company, 66 N. Juniper Street, Philadelphia, Penna. 19105.

The overhead projector in the past few years has enjoyed substantial improvements both in optical quality and mechanical features generally. They produce more light and brighter screen images. Compact design and the use of new materials have led to greater portability and ease of use.

Since the overhead projector has become so universally accepted as a versatile teaching aid, a brief review of classroom applications might be of some help to the newly initiated. What follows is meant only to be a handy sampling of ways in which overhead projection can be put to splendid use in making teaching easier and learning more fun.

ENGLISH — Transparencies can be made of lines of poetry in an exercise for students to work out the meter of poems. Original poetry written by students may be projected for class discussion.

A theme or portion of several themes may be projected, omitting names of students, for class discussion and correction. Representative sentences may be projected and by writing on the transparency, a step-by-step breakdown of the sentence structure can be made. A transparency can be made of a bibliographic format using references from books, magazine articles, newspapers, encyclopedias or pamphlets. Transparencies of footnotes illustrates their purpose and form.

BUSINESS EDUCATION — Transparencies of various business forms can be made and shown for explanation by the teacher. Afterward, practice forms may be filled in by the students for projection and class discussion.

In shorthand classes, transparencies made from magazines or newspaper articles give students exercise in transcribing from current materials.

MATHEMATICS — Transparencies can show proof of the various theorems. In this connection, overlays of different colors can be used for greater clarity. Transparencies of graphs can be filled in with grease pencil as they are being shown.

HOME ECONOMICS — Projected pattern directives may be made to teach students how to read and interpret directions given on the pattern sheet. Similar transparencies show how to alter a pattern or how to place a pattern on the different types of materials.

REMEDIAL READING — A transparency of the Dolch word list can be used by the entire class or by small groups for quick recognition. For vocabulary improvements, students may select substitutes for over-used words. Compile a list of these for a transparency and share with the class. This will motivate interest in words and create competition in student work.

MAPS CAN BE MADE

WORLD GEOGRAPHY — Transparencies of all types of maps are ideal as illustrations in map study work. Later, outline maps may be purchased or drawn by the students and transparencies made for use in tests or in class review, filling in names and locations of cities, mountain ranges, rivers, etc., with pen or grease pencil. Textbook problems can be assigned individual students, such as making maps showing major cities or highways in the U. S., ocean trade routes or major waterways, and these can then be made into transparencies and projected for class discussion.

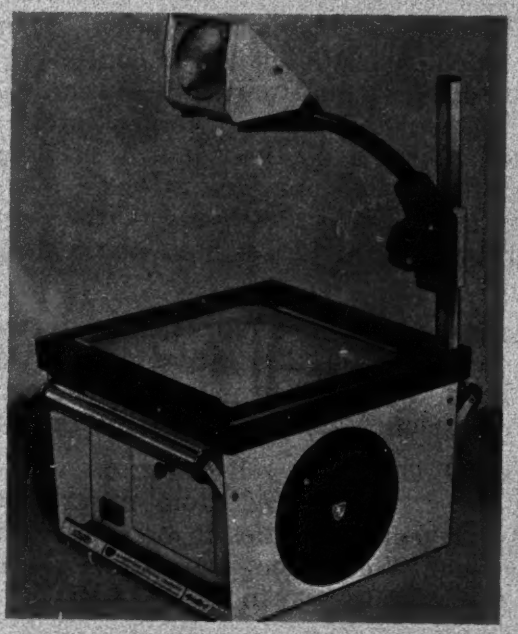
SOCIAL STUDIES — Transparencies can be made of advertisements, cartoons and editorials which present propaganda-type material. Students may prepare reports on different countries, using graphs of type and number of products, size of the country and populations in comparison with the United States. Current events, topics or maps and drawings can be clipped from newspapers and transparencies made for classroom use.

LIBRARY — Make a transparency to illustrate general floor plan of library and also rules of conduct in the library. Illustrate the three most common catalog cards: author, title, and subject. Make transparencies for review of library terms, such as fiction, non-fiction, call number, biography, classification, reference books, etc., as well as sample table of contents, index and cross references. Make a transparency of a sample page showing a list of periodicals indexed and key to abbreviations and a sampling of material from the Reader's Guide.

ATHLETICS — Transparencies can be used to explain positions, plays and makeup of teams in almost any type of game. They are excellent for scouting diagrams of opposition team strategy. Transparencies also can be projected during half time to make adjustments in plays for the next portion of the game.

DRIVER EDUCATION — Traffic and warning signs are ideally illustrated in transparencies. Equipment required on motor vehicles also can be shown. Diagrams of traffic situations showing right-of-ways, procedures at intersections and other driver problems can be quickly drawn and transparencies made.

ADMINISTRATION — The superintendent and other school officials can use transparencies in talks to the school board, the PTA, teachers and other groups. Graphs and charts can be quickly made up and projected for business meetings.



The Apollo 6 with 3649 Attachment for Cellophane or Acetate Rolls.

NEW SYSTEM FOR DRIVER TRAINING UNVEILED

Editor's Note: The article appearing below is an abbreviated version of an article appearing in the "Drivotrainer Digest" December, 1965, Volume VII, No. 3.

A unique teching aid which adds a new dimension to the classroom phase of driver education was unveiled at the National Safety Congress in Chicago October 25. Called the AEtna Drivocator system, it is a complete, virtually automatic, multi-media device that can instruct as many as 60 students at one time.

The Drivocator system is sponsored by AEtna Life & Casualty, which will produce Drivocator instructional programs, assist in teacher training, and provide an educational liason service for Drivocator system users. The equipment will be produced, sold, and serviced by the Drivex Corporation of Mountain View, California, a subsidiary of the Raytheon Company.

The new device consists of a central console, small enough to be placed on the teacher's desk; a 16mm wide-screen motion picture projector; a 35mm film strip projector, and an individual responder for each student. Optional equipment includes a programmer with which the instructor can tailor his own lessons, using available audio-visual materials.

The AEtna Drivocator system is designed to bring a sense of excitement and immediacy to the classroom phase of driver education, and to foster a close relationship between pupil and teacher that is often lacking in conventional courses. Because the program requires periodic responses, every student participates. All must answer; failure to respond or incorrect answers are immediately evident.

In contrast to the Drivotrainer program, which is limited to the behind-the-wheel phase of driver education and used essentially by only larger schools, the Drivocator system is designed for use in the classroom course which is offered by many more schools, both large and small.

If used with the Drivotrainer classroom, the Drivocator system can give schools a driver education program with continuity, one that leads the nondriver from beginning concepts, through attitude development, and into properly reinforced driving habits.

For further information on the AEtna Drivotrainer or AEtna Drivocator systems, write to Information and Education Department, AEtna Life & Casualty, 151 Farmington Avenue, Hartford, 06115; or to Drivex Corporation, 341 Moffett Blvd., Mountain View, California.

Students learning to drive using the Drivocator System.

XEROX UNVEILS PLANS TO BROADEN EDUCATION ROLE

Xerox Corporation's "large and lasting commitment to the field of education" was described recently by Joseph C. Wilson in a presentation to the New York Society of Security Analysts.

The president and chief executive officer of the company said that to accomplish long-term objectives in education Xerox is taking what he termed "a very broad view" of the whole field.

"Our areas of inquiry," Wilson said, "range from texts and instructional materials to remedial procedures, curriculum development, professional and industrial training, facilities design, educational managements, consumer education, new kinds of printing and publishing, handling, processing, retrieval and display of all forms and types of educational communications.'

Wilson said that Xerox views education as "becoming a way of life equally important to the Ph.D., the skilled industrial worker, and the semi-skilled laborer. No longer can anyone consider it an optional process which formally begins and ends.

"Yet to make education a way of life in America is obviously easier to say than to do. Confronted with a chain reaction of exploding information, prodded by increased population, inhibited by traditions, and threatened with an acute shortage of teachers, education not only presents massive potential as a market but the greatest opportunity for innovation and contribution to which any institution can aspire."

The Xerox president noted that an estimated $39 billion is spent annually now to educate more than 54 million people in the United States. Also, four million Americans are born each year and, he said, "the need for greater expenditures in the future rings like a clarion in our era."

He added that as educational needs increase, the number of teachers per student is expected to decrease so that "soon we may find ourselves facing a shortage so severe that our problems of natural resources will pale in comparison."

"Of course, this cannot happen," Wilson said, because of "that elemental force which we casually refer to as the knowledge explosion. It is beyond dispute that scientific knowledge around the world is growing too fast for our present means of understanding and assimilation. In some disciplines, knowledge doubles while a student is studying for his degree. It is as if the theory of an expanding universe that accelerates to infinity has found a real analogy in the realm of human knowledge."

To attack the problem, Xerox has been building strengths. Wilson described some of these strengths, including acquisitions of American Education Publications, "a unique vehicle for participating in the frontiers of elementary and secondary education;" Basic Systems, Inc., with designed instruction materials "derived from our growing knowledge of behavioral psychology and its application to learning;" and University Microfilms, Inc., "which today possesses the most comprehensive microfilm library and facilities in the world."

Summing up the company's approach to education, Wilson said Xerox has no intention of imposing hardware on the content of education, except where the need is proven and the value clear.

"We are entering this market," he said, "with many more questions than answers, and we propose to devote a great deal of time and money to searching for answers that can be tested, proven and translated into products and services."

AEROSPACE EDUCATION — A BREAKTHROUGH IN SOCIOSCIENTIFIC LITERACY

By Charles W. Conroy

Director, Editorial and Curriculum Division, National Headquarters, Civil Air Patrol, Ellington Air Force Base, Texas

Ancient adventurers explored the seas in ships, and pioneers of yesterday conquered the air in balloons. Today men are penetrating the outer atmosphere in unconventional aircraft and venturing into space aboard revolutionary vehicles.

The breakthroughs in the aerospace sciences that have given birth to our engineering achievements in air and space are also generating dynamic humanistic forces. These forces are changing rapidly the social, economic, political, and cultural structure of the world. Interpreting this impact of air and space vehicles on society is a primary goal of aerospace education.

Aerospace Education Programs

The Civil Air Patrol, an all-volunteer, civilian auxiliary of the United States Air Force, provides aerospace education experiences for its members and co-sponsors similar programs in secondary schools, universities, and teacher-training institutions. It also conducts short-term aerospace education programs for the general public. High school and college courses based on Civil Air Patrol's curriculum guides now bring aerospace education to more than 600 local schools. Institutes conducted by the Civil Air Patrol for the public increase general understanding of the effects of air and space vehicles on our way of life. Aerospace education enrichment programs in elementary and secondary schools update course content and stimulate curriculum development. More than 200 aerospace workshops cosponsored by Civil Air Patrol each year graduate more than 30,000 teachers who are skilled in interpreting the impact of aerospace.

Aerospace Education Objectives

Each aerospace education program sponsored by the Civil Air Patrol seeks to provide:

1. A reading and speaking vocabulary of aerospace terms.
2. A knowledge of weather and climate as factors in aerospace operations.
3. A familiarization with the physical and biological sciences applied in aerospace explorations.
4. A general understanding of the structure of aircraft, rockets, missiles, satellites, and space vehicles.
5. A familiarization with the aerospace industries.
6. A knowledge of the impact of aerospace progress on international relationships.
7. An understanding of the social, economic, and political implications of aerospace technology.
8. A knowledge of airports, airport services, and the functions of airport personnel.
9. An understanding of existing and proposed government services and regulations that facilitate aerospace operations.
10. A knowledge of career opportunities created by air and space vehicle development.
11. An understanding of the basic scientific and engineering principles employed in air and space vehicle manufacture and operation.
12. A realization that aerospace vehicles have changed traditional concepts of land masses, water barriers, speed, time, and distance.
13. An understanding of the political, economic, social, and cultural challenges created by aerospace progress.

Teaching Aids

Civil Air Patrol publishes a complete series of free and inexpensive aerospace education textbooks, student workbooks, instructor guides, filmstrips, recordings, and programmed instructional materials. Objective-type examinations, free materials for teachers and administrators, motion pictures, and exhibits are also made available by Civil Air Patrol to schools conducting aerospace education programs.

Seven CAP textbooks are used to teach aviation and space orientation, aircraft navigation, aviation weather, principles of flight, aircraft engines, air traffic control, space technology, and the challenge of aerospace.

Each text is supplemented with a student workbook, instructor guide, full-color 16mm filmstrip, and 33⅓-rpm recording. Programmed texts (linear format) provide auto-instruction in aircraft identification, the international phonetic alphabet used in aviation radio communications, and rocket and missile identification. Objective examinations that measure mastery of the content in each text are made available free to schools. A free test-scoring service is also provided.

Other free materials available from Civil Air Patrol include an aerospace education course syllabus for secondary schools, an annual list of aerospace workshops for teachers, and a curriculum outline for a college-level aerospace education course.

Each year Civil Air Patrol co-sponsors more than 200 aerospace education workshops for teachers.

Aerospace Education Services

Schools interested in conducting aerospace programs may also obtain a number of free services from Civil Air Patrol. These include:

1. Professional consultation in the development of an aerospace education curriculum.
2. Guidance in the administration of aerospace education programs.
3. Assistance in identifying, appraising, securing, and using aerospace education resources.
4. Recommendations for the selection or recruitment of aerospace education teaching personnel.
5. Assistance in obtaining the services of nationally acclaimed speakers on aviation and space subjects.
6. Assistance in obtaining the services of special consultants in aerospace education.
7. Assistance in selecting aerospace education textbooks, workbooks, instructor guides, filmstrips, recordings, and programmed teaching aids.
8. Assistance in arranging course-related field trips to aviation and space installations.
9. Assistance in arranging for orientation flights in military and civil aircraft.
10. Assistance in obtaining the services of teams of expert speakers to explain special air and space projects and programs.

Educators interested in developing programs of aerospace education are invited to request a catalog of CAP aerospace education materials and information about free services provided by Civil Air Patrol. Inquiries should be addressed to National Headquarters, Civil Air Patrol, Ellington Air Force Base, Texas, 77030.

The Education Challenge of Aerospace

Unless our educational system remains sensitive to the requirement for curricular modification, the scientific, technological, and engineering momentum of aerospace progress may likely generate an informational 'no man's land' between the specialists and "generalists" in our society.

The increasing educational need for interpretation of the impact of aerospace science and technology on society is placing progessively heavier requirements on the relatively young aerospace education movement — a pedagogical breakthrough that promises to achieve new highs in socio-scientific literacy.

ANYONE INTERESTED IN TESTING?

Editor's Note: (The Curriculum Service Center of the National Association of Secondary-School Principals publishes **Curriculum Report** as a service to the profession. Its topics include the problems and developments in education which are of concern to all educators. In reviewing a number of these reports, we were impressed with their timeliness and relevance to the important challenges which face all curriculum makers. The high quality of the **Curriculum Report** and its supplementary reference service reflect favorably upon the NASSP. We have received permission to include in the **Circulator** excerpts from **Curriculum Report No. 6,** "Testing Reviewed." Copies of this and other reports may be obtained from the NASSP, 1201 Sixteenth Street, N.W., Washington, D.C. 20036. Single copies, 50c; less for quantity orders.)

Report No. 6 is an abridged version of the annual report of the president of the Educational Testing Service, Mr. Henry Chauncey. This provocative report covers the progress and failures of the testing movement in America, with predictions and suggestions for the measurement of human behavior.

We include here a few lines from the report, and heartily recommend it to everyone interested in testing; if you are not presently interested in testing, get this report and you will be.

Intelligence and Appitude Testing

". . . so-called intelligence tests never did measure some innate thing called 'intelligence' that could be summed up in one number called IQ, or intelligence quotient."

". . . what we are testing is developed ability or aptitude which results from the development of what ever innate ability an individual has."

". . . any test score simply indicates how well an individual performed the tasks on that one test at that time — and that his scores on similar tests will vary from time to time because of a number of variables, including the 'error of measurement.'"

Tests for Measuring Academic Growth

". . . more important than tests used to measure status at a particular time are tests for measuring academic growth, especially if we are trying to apprise the effectiveness of education and the development of basic intellectual qualities in an individual student."

Status of Personality Measures

". . . Compared with current academic ability and achievement tests, *personality measures, if viewed against the standard of predictive validity, are in the infant stage of research and development.*"

What About Motivation and Creativity?

". . . The relationship of motivation to educational achievement, intellectual maturity, and creativity is being studied. But *the day will never arrive when there will be a single measure of something called 'motivation.'*"

". . . Once the characteristics of creative people have been defined more clearly, *research will probably place major emphasis on investigating those conditions or methods of instruction that increase the creative capacities of students.*"

Research In New Directions

". . . Curriculum development is certainly one area in which testing might play more of a role than it currently does. This role could be one of testing a new curriculum — not the students — to find out where the course is too easy, too hard, interesting, or dull. Research suggests that *rather than fit students into certain curriculum molds, we should develop assorted educational materials to fit students with different kinds of minds and different styles of learning.*"

A PICTURE IS WORTH ∞ WORDS

The search for special materials in work with poverty areas, non-verbal children and functionally illiterate adults continues to grow. The John Day Company has put together a set of oversized photograph albums, spiral bound and particularly suited to group use, printed on heavy cardboard capable of standing alone for easy display. The major market will be the schools, but libraries and religious groups embarking on "HEAD START" programs will also be interested and the publisher has promised cooperation in "On Approval" orders.

The eight basic albums . . . include twelve photographs each that build on the concept suggested by each title. These were well-selected to stimulate discussion; they are active, detailed, clear, and present familiar situations. The adults and children in the photographs are both Negro and white in everyday situations. The backgrounds go from urban park settings to residential area housing to tenement slum areas. (See photo below from the album "WORK IS. . .")

A picture used in the album "Work is . . ." The purpose of the picture is to present a real work situation with which children can identify.
Photo Credit: Reginald Jackson, from "Work Is . . ." Urban Education Studies, The John Day Company.

The project was devised by Betty Atwell Wright on Ford Foundation Funds and the series is an expansion of her successful pilot project developed for the New Haven, Connecticut schools where she is Curriculum Supervisor.

Each album is 18" x 18" and comes with a teacher's guide which gives suggestions for classroom use, for building language art skills, and for study unit tie-ins. . . .

In addition, and available for separate purchase, are special city albums which include 24 photographs in the same format as the basic concept books. These start with aerial views of the cities . . . and continue the pattern of familiar integrated-population street scenes started in the series noted above. Each has been prepared by an educational specialist from these cities and each comes with a teacher's guide.

Inquiries should be made of the John Day Company, Inc., 62 West 45th Street, New York, N. Y. 10036.

TEACHING AIDS LISTING UPDATED

The titles of almost 4,000 teaching aids have been included in the most recent edition of *Free and Inexpensive Learning Materials*, compiled by George Peabody College for Teachers. One-third of the titles have been added or revised since the last edition. The selections are factual and free from exaggeration or propoganda, and are included on the basis of content, timeliness, format, and utility. This publication may be ordered from George Peabody College for Teachers, Nashville, Tennessee 37203 at $2 per copy.

Area Six Schools (Events, Projects, Views)

Editor's Note: (The non-graded elementary school is a subject of much discussion among educators. The Akeley Laboratory School on the Lock Haven State College campus implemented such a program last September. The following two articles discuss the philosophy and theory upon which the program developed and describe the actual steps followed in putting the system into effect. Student reactions to this experimental system are included in the second article.)

THE NON-GRADED SCHOOL: A RATIONALE

By Mr. Edward C. Clawson

Associate Professor of Education at Lock Haven State College, Principal of the Akeley Campus School.

The system of grade organization has traditionally been accepted as the best arrangement for teaching large groups of children in a school. Yet an increasingly large number of teachers recognize the fallacies upon which this system is founded.

It was once believed that, with regard to learning, chronological age and motivation were the only significant differences among children. Thus, all children at a given age were expected to achieve at the same rate; those who didn't measure up were labeled as "lazy" or assigned a similar stereotype.

Grouping on the basis of chronological age dates from medieval times and was introduced in this country about 1848. The system has persisted primarily because, until recent years, little was known about individual characteristics and their significance to learning. Today, however, the human individual is understood to be a unique, creative entity with a unique potential and predisposition. Science has shown us the error of our ways in school organization, and traditional practices can no longer be condoned by anyone who is seriously concerned with education as a means toward human fulfillment.

These children might be considered homogeneous in a typical graded school. Their chronological age span is only 3 months (11 years 3 months to 11 years 6 months). However, physical development varies widely, from 4'4" to 5'2", and the scholastic achievement levels range from 6 yrs. 2 mo. to 9 yrs. 8 mo.

"Children are Not Racehorses"

Elementary school children have been viewed in much the same manner as racehorses. They are assigned each year to race with their age mates; each June they jump to the next "class" higher on the scale. Racehorses progress (and regress) by annual stages, but children do not. A child's development is continuous and irregular. An individual may be ready to move into the next "class" at any time during the school year; he could be ready for that fourth grade reader long before September, or might not be ready until December.

Even though children may appear to be the same physically (the above group has a range in physical size of only 1"), other characteristics important to learning will probably vary widely. Among these five pupils the chronological age ranges from 11 years 0 months to 12 years 5 months; their scholastic achievement ranges from 5 years 2 months to 9 years 2 months.

Lock-step grouping by chronological age is not supported by our understanding of child development. It is entirely incompatible with the basic objective of American education, which is to develop in each child his full potential. In short, a modern program of education cannot be effective in an age-graded organization. Increasingly, educators are asking, "What organizational pattern can best create an interest in learning within the enviroment of the school?"

When students are grouped on the basis of their scholastic achievement levels, educators must keep in mind that they will differ widely on other criteria. The group above ranges in scholastic achievement from 6 yrs. 7 mo. to 6 yrs. 8 mo. (one month) However, in physical size there is a range of 6½" (4' 11½" to 5'5"). Also the chronological age of this group spans 10 years 5 months to 12 years 8 months.

The silhouettes of the children included in this article were made from photographs taken by Mr. Edward H. Young, Director of Public Relations, Lock Haven State College."

"Train Him Up In the Way The Group Shall Go"

The ancient admonition to train a child in the way he shall go has lost much in its translation into school organization and policy. Do we truly strive to train a child in the way he should go or do we train him in the way the group is going? Surely much of what we do in elementary schools is placed into the group category. It is not difficult to find many groups of children in a grade in American schools who must "get through" the basic textbook before anyone in the group is encouraged to read any other material.

Before any radical changes can take place in the organization of schools, educators will have to change much of their thinking about learners. When we begin to discuss individual differences, many in elementary education will say, "We have always recognized individual differences, we have groups in our classes, and we are using basic readers with classmate editions," or "I give Johnny help after school with his arithmetic so he can keep up." Keep up with whom and why? Are we concerned with individual progress or with group progress?

The teacher and the student must assume new roles if they are to create a climate for exploration, discovery, creation and imagination. They must subscribe to the notion that learning is not simply committing to memory a prescribed set of facts, generalizations or principles that have been ordained as necessary for the future; learning is an aspect of growth by which the child develops the ability to preceive, act, react, adjust to and gain control over the enviroment with increasing success. The child must be permitted to use inductive reasoning from an active personal experience as a means by which he learns principles. Such principles can then be used to further develop new learnings through deductive methods.

All of this implies then that the individual child is the learner and the thinker, and the group within which he operates is a stimulus to further thought. The group will act as a catalyst only if the individual is permitted to interact with and react to the other individuals and the teacher.

In such an enviroment the teacher has a very special role. All children and the teacher will be planners, but the teacher must be the adult planner, supervisor, helper and guide. In the adult role the teacher must be responsible for programming for individual progress. He must guide the child through a systematically arranged enviroment that will stimulate action and reaction to both things and other people.

If this is to come about it is apparent that the youngster will progress at a different rate and in a different direction from others in the group. Certainly no ceiling should be put on his development. Individual progress will lead to the need to move out of the group if it can no longer stimulate individual learning. The need to move to another more stimulating enviroment may occur at any time during a school year. The way must be open for such movement. The child cannot wait for the group if his imagination and creative powers are to be enhanced.

At the present time the most promising arrangement for such free movement seems to be the nongraded elementary school, or, more precisely, an individual continous progress plan.

"How Is That Again?"

"Mr. Johns, I didn't understand that explanation of today's work." This is a typical statement made by youngsters in any grade. What is Mr. Johns' reaction? Should he go through the explanation again? If he does, should he explain only to one student or to the whole class? Were there a few in the class who did not need the explanation when the class began? Obviously Mr. Johns has a problem for which there is no easy answer. Indeed there is no answer so long as all youngsters in the class are expected to perform the same feats.

A reorganization of the process must be made to concentrate on the individual. To accomplish such a task a reorganization must be accomplished that will allow for individual learning. We must be aware of the stimulating influence of youngsters on one another and organize to enhance this stimulation. We must determine the "learning level" of a youngster, and plan to place him with youngsters with approximately the same learning level. By "learning level" is meant, those general interests, abilities, and understandings that are at approximately the same stage of development. This cannot be determined by a single test, but must be based to a great extent on the teacher's knowledge of individual youngsters.

"How Can I Do It When I Have Thirty-five and . . ."

No one can do a very effective job in any system with thirty-five pupils: such a student-teacher ratio is sheer expediency. It is a method whereby a community can "save" money. However, to "save" money at the expense of quality in education means the loss of human resources — our society's greatest asset. The non-graded school program is comitted to the development of human potential. It can be implemented in *any school* which will make a similar commitment.

We must begin when the youngster enters kindergarten to permit and challenge him to learn as much

as he can in his own way. Let us remember also that this youngster learned to hear and interpret and speak before he entered school. Is anything we do in formal education more difficult?

Freedom to learn implies that there must be much in the room from which he can learn beside the teacher's voice. Many materials to handle, manipulate, smell, feel, hear and taste must be present. Given the opportunity he will take it all in. This certainly implies, however, that the teacher knows the child and plans for his many experiences. He will progress through all that a kindergarten can provide at his own rate. When this child has "wrung" all that he can "wring" from the kindergarten environment, including the other children and the teacher, he should move on. This may be anytime during the year. It does not imply promotion, it simply means that he is moving to an enviroment in which his development can continue.

After the child leaves kindergarten, he will enter into the more or less formal development of those skills held to be central to the school program: reading, arithmetic, writing, social studies and science. His reading program should be tailored to him and to his needs. Such multi-level materials as the Reading Laboratories of Science Research Associates have been adapted to an individual progress plan. This multilevel program is supplemented in the Akeley school with a wide use of library books. Each child progresses at his own rate in each of the subject matter areas.

In conclusion, a continuous progress plan, or nongraded school organization, is well supported by our present knowledge about how children best learn and develop. If teachers and administrators plan together, this program can go a long way toward adequately meeting the learning needs of the individual boy or girl.

TEACHING WITH THE CAMERA

By Don Daughenbaugh

South Williamsport High School. Mr. Daughenbaugh, biology teacher at South Williamsport Area High School, graduated from East Stroudsburg and Boston University. He has been on the South Williamsport staff for 14 years. He has taken extra work at the University of Colorado.

Many years ago teachers discovered that the statement "one picture is worth more than a thousand words," was probably the understatement of our century. Today we are swamped with new devices in all phases of teaching that will more fully illustrate and project basic ideas and concepts to all levels of learning. With each device we usually find many advantages and disadvantages; these must be weighed carefully by the individual instructor with particular emphasis on the objectives and feasibility of the devices within his system. Equipment is often so expensive that the smaller schools are completely prevented from purchasing it. With this in mind I would like to discuss our program at South Williamsport Area High School, a program which is in the infant stage of development but which is widely used throughout our system.

Several years ago at our school the idea of introducing the basic 35mm camera into the school as a medium for producing visual aids was conceived by members of the staff. The science department was particularly interested in increasing the types of visual aids to be used and as most will agree this department is extremely adaptable to many kinds of instructional devices. After careful discussion with the various members of our science staff it was decided that our first step in such a program should be the securing of a versatile camera and the attachments necessary to achieve our purpose, which was the production of color slides of a first class nature suitable for projection within the classroom.

Since good camera equipment costs money this appeared at first to be our biggest obstacle. The idea of approaching interested businessmen in our community was conceived and after several inquiries it was learned that there was considerable enthusiasm in favor of our project. As the idea grew, it wasn't long before businesses such as the South Williamsport Bank sought to be a contributor to our educational cause. Since this beginning, these local contributors have been the sole sponsors of this program and have willingly supported it.

Left to Right: Mr. Harry Nolan, President of Bank; Mr. Donald Daughenbaugh, Biology Instructor; Mr. Raymond Rommelt, Supervising Principal.

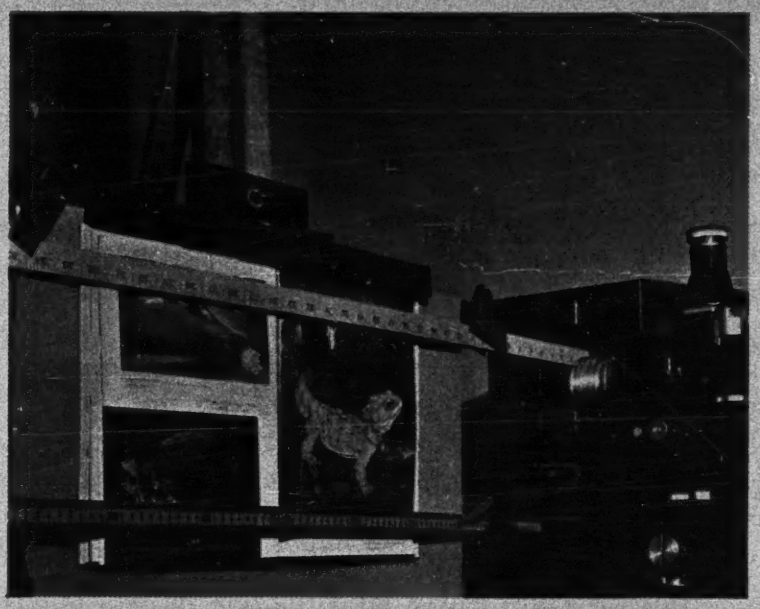
The reproduction of slides from texts, magazines, famous paintings and printing materials.

Generally speaking, the materials and illustrations in texts and magazines are of a high quality and many times quite desirable for classroom use. These materials can be filed for future use, posted or in some manner displayed before the student to illustrate ideas and create interest. Our staff had accumulated large volumes of materials that had been used many times in the classroom. It was from this material that we began to develop a good set of slides for future use in the system.

The earth sciences are in constant need of hundreds of various maps that can be studied in regard to land forms and development. This department has filmed many valuable topography maps along with the land formations from related areas to illustrate the basic concepts desired. It is of particular interest and value for the student to study from a large projected slide before he actually encounters the exercises required by him on many topography sheets. Our instructors may spend an entire period discussing one or several slides projected in large detail before proceeding to detailed exercises which call for actual student participation. In addition to the above we try to encourage all teachers who travel to science institutes or take vacation trips to film actual land forms, rocks, minerals, etc. that are related to the course. This, in itself, adds to the sequence of learning, and interest is usually very high in both among the teachers and the students.

Biology also is a field that lends itself to the development of a first rate set of colored slides. We have been fortunate enough to have acquired slides of hundreds of plants and animals from throughout the United States for use in our classes. Many times specimens are located in various countries of the world and therefore almost impossible for the instructor to bring into the classroom except from some visual illustration. In this case it is quite easy for the photographer to reproduce a sharp color slide or black and white photograph from some good textbook or periodical. Below is the basic set-up we use for copying this type of material. We realize that there are many other copying stands and devices but for all purposes we like this simple easel because of its moveability and because of the ease with which we can attach almost any type of material.

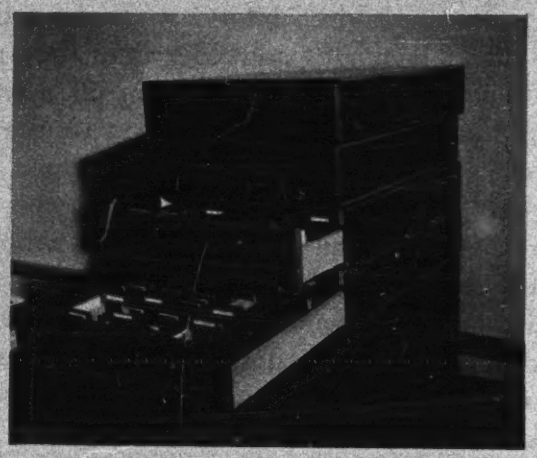
In this photograph you will note that we are using a 35mm Leica camera with attached bellows. To this we attach the regular visa-flex which converts the Leica into a single lens reflex camera — a desirable feature for close-up photography. We use the 65mm lens with porta lens and 135mm telephoto for many of our close-up shots. Generally speaking we use one photo-flood lamp for the source, which is carefully metered and adjusted for glare. For our film we use exclusively extochrome X with the necessary filters.



We photograph not only animals and plants but any diagram or printed material that can be used in correlation with the topics being taught. Specific cellular structures of all body tissues are quite easy to photograph through the microscope, and our department makes elaborate use of many such slides. In this teaching procedure we feel that five minutes of observation and explanation by the instructor of a large projected object saves much explanation. This little effort precisely points out to the student what we are searching for and practically eliminates the biology teacher's biggest headache in microscopic work: student drawing air bubbles, edges of slides, dirt, etc. In addition to copying from prints we have added to our collection over 1500 color slides of living plants and animals from sections of the United States.

World cultures as well as ancient history and industrial arts teachers have made many slides from projects, illustrations and travel ventures for use in classes.

The storage and care of our slides has required and received careful attention. After filming, our slides are developed commercially and mounted in Lindia mounts. This task is usually carefully carried out by several capable students interested both in helping and learning more about photographic procedures. The slides are then labeled and stored in cabinets for future use. Each department is given a cabinet to take care of the necessary slides, and instructors in the various departments accept the responsibility for the care and use of the materials.



The type cabinet used by S. Williamsport School to store its 35mm slides.

We have covered only slightly the possibilities that exist with the use of the 35mm camera in the classroom, but we feel these projected materials have many advantages over other visual aids. We feel that sources of available materials are almost endless and that they can be chosen to express exactly what the instructor desires. Over the years this proves to be one of the least expensive types of instructional aids obtainable. In addition the 35mm camera can be used in the school for all types of photography and as a tool to create student interest.

PLANNING AND IMPLEMENTING A NON-GRADED ELEMENTARY PROGRAM

By Paul W. Myers

Assistant Professor of Education, Lock Haven State College and teacher in the Akeley Campus School.

A Committee Was Formed

A committee was formed at the Akeley Campus School to examine its school organization in light of what was believed to be educationally sound for elementary children's continuous progress through the elementary school. The committee reviewed the philosophy, objectives and educational principles upon which the elementary school is built, and in terms of these beliefs made recommendations for revision of the school organization to better reach the objectives of the elementary school.

Work was begun with a concern for individual student progress, for having children feel comfortable in the classroom enviroment, and for having children feel secure emotionally, mentally, physically and socially.

The problem presented itself of finding a way of minimizing the wide range of achievement as found in the graded school organization. With these ideas in mind, it seemed possible to group children in accordance with their ability to achieve, with the possibility of reducing the extreme ends of the achievement spectrum, as found in the usual graded classroom organization. A two year span of achievement looked possible for each classroom group, rather than the normal span of five years or more as is generally the case in the graded school.

From observations and study, the committee knew that children of all ages can play and work together without dire consequences. It seemed reasonable that children who are achieving at nearly the same levels would have a common interest regardless of age.

With all of these factors considered, each child's placement was assessed in terms of his emotional, social, physical and mental maturity. These qualities, plus the child's achievement level, provided the framework from which the various classroom groupings evolved.

Curriculum In The Non-Graded School

In a graded school it is relatively easy to define the curriculum content in terms of subject matter to be mastered at each grade level. The non-graded school requires a different approach in terms of content and subject matter to be mastered. A new approach is necessary because every child does not necessarily pass through every learning level, and because some children could conceivably pass through several levels in a single school year.

The Akeley staff is in the process of identifying principles of learning for each of the content areas. These principles are developed so as to spiral through the various levels. Thus each level is concerned with the same principles, but at different levels of understanding and sophistication. The emphasis is on the development of important principles and concepts.

This approach to the curriculum requires a greater mastery of the reading and writing skills, with many experiences with the functional aspects of these skills. Independent work becomes more important with greater stress on writing for a purpose. A wide range of multi-level materials are made available to meet individual needs of all the children, especially in reading, spelling, science and math.

In addition, there is new importance given to discovery, especially in the areas of science and math. The discovery approach to learning permits a deeper involvement and participation in the learning process, with greater retention of the principles and concepts learned.

Reporting and Grading System

At the Akeley School there are no grades as such, nor is there a report card carried home to the parents. Instead, student progress is reported through the parent-teacher conference twice a year, with a written report assessing the child's individual progress at the termination of the school year.

Parents and teachers have found the conference method of reporting student progress very satisfactory, and certainly more informative than a report card. The conference gives parent and teacher a time for asking questions relative to the child's total progress and adjustment.

With this system of reporting, the slower students, in terms of ability, need not worry about failing grades. Each child is viewed in terms of his individual potential and individual problems.

In the classroom situation, the absence of grades does not affect the individual effort of the pupils; if anything, the student's work is improved since he is not competing for grades with his peers, but works for his own satisfaction.

Children React

What do children think of the non-graded school? In the course of interviewing children who have moved to a different level since the beginning of school in September, or children who are in a group where most of their classmates are either older or younger than those interviewed, several interesting reactions were observed. In general, the children do not appear to be disturbed or adversely affected by the change in their school organization.

Older children in a classroom with younger children indicated a liking for the opportunity to be advanced. One said that you have special help when you need it. They did not seem to mind being in a room with children younger than they were, even though they prefer being with children of their own age. The older children's friends were of their own age. Some of the older children feel somewhat sensitive about being in a group where the majority of their classmates are younger than they are. They all indicated they were at a level where they feel successful with the school work they are doing.

The group of children interviewed where the majority of their classmates are older than they are, indicated that they felt comfortable in class with the older children, and that this was one of the things they especially liked about school this year. When asked what they liked best about school this year a typical response was that they liked the whole idea of the new organization. All of these children agreed that their classmates were more fun this year. They also said they liked the new program because you get to know more kids this way. Only one boy said he missed his friends in the room he left.

All the children moved during the course of the school year indicated an uneasiness in their new room for the first day or so. It seems this would be an expected and natural reaction in a new classroom situation. The children's reactions will need further investigation as the program continues in operation. The social problems do not seem severe, especially in view of the fact that the children feel secure with their school work.

Aids and Ideas

NEW SUMMER SESSION COURSE

Editor's Note: We are pleased to announce the addition of a new course to the 1966 Summer Program at Lock Haven State College. The course was developed by and will be under the supervision of Dr. Perry Brown, Professor of Education at Lock Haven State College. Dr. Brown has had a rich variety of experiences in teaching at all levels of education. He was a school administrator and has been successful in utilizing the resources of the communities in which he served as an educator. The new course is designed for teachers "in the field" as well as undergraduate education students.

THE SCHOOL AND THE COMMUNITY will deal directly with the important techniques that can be used to supplement and enrich the teaching-learning situation through a closer interaction between the school and the community it serves. Emphasis will be placed upon the use of community resources — agencies, places and persons — in heightening children's interest in classroom instruction through direct rather than vicarious experiences. Additional activities will include speakers, panel discussions, and field trips to illustrate the use of major resources in implementing the instructional program.

THE SCHOOL AND THE COMMUNITY may be taken to fulfill course requirements toward permanent State certification or as a general elective course. It will be offered during the main Summer Session.

ETS OFFERS NEW SERVICE TO CURRICULUM DEVELOPERS

In response to an ever-growing quantity and variety of requests from educators for assistance in curriculum projects, Educational Testing Service has arranged a new facility to serve education. A special Curriculum Studies group has been formed to promote and coordinate projects and services of four kinds.

1. Survey of instructional practices
2. Research on definition of curriculum objectives
3. Curriculum evaluation
4. Development and dissemination of evaluation techniques

Inquiries about the services and activities of ETS Curriculum Studies should be addressed to: Dr. Scarvia B. Anderson, Director of Curriculum Studies, Educational Testing Service, Princeton, New Jersey 08540.

WOULD YOU LIKE TO MEET ERIC?

In cooperation with the Bell & Howell Corporation, the U. S. Office of Education has developed a new facility which offers a badly needed service to educators. ERIC, the Educational Research Information Center, acts as a clearinghouse for educational research, particularly in the fields of elementary and secondary education.

Eventually, ERIC will make available to educators pertinent information about curriculum development in a wide variety of subject matter areas, at any grade level. For example, if a school is interested in developing a program for the unmotivated pupil, he can contact ERIC and receive in return a kit of materials pertaining to this type program. Included in the kit is a bibliography listing similar programs already developed, data on funding and other information on how to develop such a program and where to get help.

ERIC will serve to organize in a usable manner the enormous quantity of research in education which is, at present, not readily available to and not widely used by educators.

At the present time ERIC is operational only in the area of education for the culturally deprived child. Educators who wish to learn more about this service should write to: ERIC Document Reproduction Service, Bell & Howell, 1700 Show Avenue, Cleveland, Ohio 44112.

ESTABLISHING REALISTIC EQUIPMENT FOR EARLY GRADE LEARNING

The Learning Center, Inc. of Princeton, New Jersey, a division of Creative Playthings, Inc., is an outstanding pioneer in translating early grade learning into self-discovered manipulative laboratory and physical experiences at each child's desk.

Twenty-seven different desk top laboratories have been developed and assembled to help primary grade children discover new ideas in mathematics, physical geography, and science. These laboratories are often supplemented by large teacher demonstration models.

All of the labs are integrated into a curriculum of major ideas and materials which develop from pre-kindergarten to eighth grade.

Creative Playthings, Inc. has also developed an "Equipment Checklist" of equipment and supplies necessary for 15 children in an equal opportunity preschool center or kindergarten. The items were selected from their experience gained in furnishing thousands of "Program Headstart" centers.

For complete literature and catalogues write to Learning Center, Inc., Princeton, New Jersey 08540.

PLANS BEING MADE FOR SUMMER WORKSHOP IN IPI

Tentative plans have been made for the University of Pittsburgh Learning and Development Center and the Baldwin-Whitehall Schools to collaborate with the School of Education in offering a special summer workshop to introduce teachers and other interested educators to the procedures and materials used in Individually Prescribed Instruction. Participants will have the opportunity of observing and actually taking part in an elementary school program operating under the plan developed in the Center's field laboratory at Oakleaf School. The workshop, to be directed by Dr. Morris Cogan, will be operated under a flexible plan which will permit persons to enroll for a one-week, a two-week, or a six-week period depending upon the extent of orientation desired. Persons enrolling for the full six-weeks period could receive graduate credit in the School of Education. Further information concerning this workshop, which will be offered during the period of June 27th through August 5th, can be obtained by addressing inquiries to: Director, IPI Institutes, 2801 Cathedral of Learning, School of Education, University of Pittsburgh, Pittsburgh, Pennsylvania 15213.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF PUBLIC INSTRUCTION
LOCK HAVEN STATE COLLEGE
Lock Haven, Pennsylvania 17745

Non-Profit Org.
U. S. POSTAGE
PAID
Permit No. 92
Lock Haven, Pa.

FROM ABLATION TO ZERO LENGTH*

The Aerospace Age has greatly expanded the everyday language of most people in all occupations and at every age level. Indeed it is not uncommon to hear young people speaking with more knowledge and understanding about satellites, exotic fuels, and rockets than their elders, including their teachers.

To assist the teacher and the student to better understand Aerospace terms, the U. S. Air Force Recruiting Service has prepared a glossary of vocabulary, free to teachers. Simply contact the local Air Force Recruiting Service Representative, or write to Commander, USAF Recruting Service, ATTN: Director of Advertising and Publicity, Wright-Patterson Air Force Base, Ohio. Ask for: *Glossary of Aerospace Age Terms.* Incidentally: *ABLATION* — Melting of nose cone materials during re-entry of spacecraft or other vehicles into the Earth's atmosphere at hypersonic speeds. *ZERO LENGTH* — (1) The length of an airborne or mobile missile launcher too short to impart guidance, but long enough to hold the missile in launch position. (2) The length of a rocket booster not used to impart guidance to the vehicle.

NEW SCIENCE MATERIALS AVAILABLE FROM HUBBARD

The new guide to visual aids for teaching earth-space science courses and general science programs at all grade levels is now available from Hubbard Scientific Company.

Products are offered for teaching in the fields of astronomy, oceanography, map reading, geology, geography and meteorology. New items include Elementary Land Form Models, Student Stereoscope and Stereogram Book, Paleogeographic Relief Models, and a complete series of overhead transparencies for Elementary Science.

Free copies of the new, expanded catalog are available from: Hubbard Scientific Company, P. O. Box 105, Northbrook, Illinois 60062.

SO YOU WANT TO CHANGE THINGS!

We note with interest the admonitions of Colonel Gabriel D. Ofiesh, USAF, an expert in the field of programmed learning. Col. Ofiesh made his remarks at a recent conference at Wayne State University on The New Media in Education, Business, and Industry.

"If you will devote your energies to innovation, you must accept the following axioms:

YOU WILL NEVER BE LIKED OR ENTHUSIASTICALLY WELCOME.

YOU WILL ALWAYS BE REGARDED WITH SOME SUSPICION. SOME WILL SUSPECT YOU MORE THAN OTHERS.

YOUR FRIENDS TODAY MAY BE YOUR HOSTILE ENEMIES TOMORROW. YOUR ENEMIES TODAY MAY BE YOUR SUPPORTERS TOMORROW BUT NOT FOR LONG.

YOU WILL TREAD ON PEOPLE'S TOES. YOU CAN DO THIS SOFTLY AND MAYBE WITH SOME SUBTLETY, BUT THE PAIN WILL BE THERE.

YOU ARE VERY MUCH LIKE A WOMAN IN THE FINAL STAGES OF GIVING BIRTH. YOU WILL NOT GIVE BIRTH WITHOUT LABOR PAINS.

YOU ARE GADFLIES.

Ultimately, your product will speak for you. If it is good — it may take hold, though not necessarily. If it is not — it probably never will.

In the end, your only gratification will be that things are possibly different in some corners of the educational world because of your efforts. Here and there a child may be a different person for your efforts."

Note: Is it worth it?

Appendix #E

LOCK HAVEN STATE COLLEGE

LOCK HAVEN, PENNSYLVANIA 17745

August 17, 1965

Dear Sir:

We publish a newsletter titled The Circulator which is funded by the Federal Government to disseminate information about curriculum developments, particularly in the field of instructional media.

We should like very much to include in future issues of The Circulator, articles and pictures which describe your products and their uses in the classroom. We feel articles which tell our readers where and how instructional media are being used successfully are most valuable.

Should you have prepared copy and pictures which might be appropriate for our publication, we would be happy to receive them from you. If you wish us to prepare the copy, we can do this if you send us sufficient information. We write brief, and hopefully, interesting articles, illustrated whenever possible. We avoid technical details and other minutia, always referring the reader to our source of information should he wish to learn the fine points of the product.

We hope to hear from you in the near future. The Circulator will be published monthly and we trust at least one article about your products will appear in the forthcoming series.

Sincerely,

E. M. Nuss
EDITOR, THE CIRCULATOR

EMN:lch

Enc.

A. I am interested in learning more about the following ideas or topics which I have read about in the *Circulator*.

1. _____ 3. _____

2. _____ 4. _____

B. To learn more about these matters, I would be interested in: (Check one or more blocks)

☐ 1. Workshops ☐ 4. Literature ☐ 7. Personal Assistance
☐ 2. Conferences ☐ 5. Demonstrations ☐ 8. Research Projects
☐ 3. Visitations ☐ 6. Lectures

C. I suggest that future issues of the *Circulator* include information about the following activities and/or topics:

1. _____ 3. _____

2. _____ 4. _____

NAME _____ POSITION _____

NAME OF SCHOOL _____ SCHOOL ADDRESS _____

SCHOOL DISTRICT _____ _____

CHIEF SCHOOL ADMINISTRATOR _____
(Please print)

Evaluate each of the following statements by checking the appropriate block. Do NOT sign your name.

1. During the past school year I found articles in the *Circulator* relevant to my teaching —
☐ Never ☐ Seldom ☐ Occasionally ☐ Often

2. *Circulator* articles relevant to my teaching were also useful to me in the classroom.
☐ Never ☐ Seldom ☐ Occasionally ☐ Often

3. *Circulator* articles, generally, were interestingly written.
☐ Never ☐ Seldom ☐ Occasionally ☐ Often

4. The editorials deal with important problems in education.
☐ Never ☐ Seldom ☐ Occasionally ☐ Often

5. The most valuable section of the *Circulator* was:
☐ From the Editor ☐ Instructional Media
☐ Aids and Ideas ☐ Area Six Schools

6. To improve future issues of the *Circulator*, I suggest:

_____

Subject Matter I Teach _____ Grade Level _____

T. N. HUBBARD SCIENTIFIC CO.

P.O. BOX 105 · 2855 SHERMER RD.
NORTHBROOK, ILLINOIS 60062

PHONE
272-7810

January 18, 1966

Mr. E. M. Nuss
Editor
The Circulator
Lock Haven State College
Lock Haven, Pennsylvania

Dear Mr. Nuss:

The increasing prominence of Earth Science subject--Astronomy, Geology, Meteorology, and Oceanography--is due in large part to their flexibility within the science curricula at all grade levels.

However, Earth Science is fulfilling a real need at the ninth grade level, taking its place among the big three as a basic high school science subject. As you may know, the National Science Foundation has sponsored a curriculum project in Earth Science and the results--textbook, laboratory manual and equipment--are now in the evaluation stage before final revision and release in 1967.

Details on the project and evaluation materials may be of interest to your readers. The enclosed publicity release and literature describe the project, its objectives and accomplishments to date, and tell how evaluation materials may be obtained.

Since "The Circulator" seems to keep readers informed on latest developments in school curriculum planning and teaching techniques, we thought you might be interested in knowing about what's new in Earth Science.

Should you wish us to prepare a general story on the project that would be geared to your editorial format, we will be pleased to do so.

Sincerely,

Thomas N. Hubbard
President

Also, if possible, I would appreciate being put on your mailing list to receive "The Circulator" regularly.

TNH:mb
enc.

DCA EDUCATIONAL PRODUCTS INC.
A SUBSIDIARY OF DISPLAY CORPORATION OF AMERICA
4865 STENTON AVENUE, PHILADELPHIA, PA. 19144 • 215 GL 7-0400

May 25, 1966

Mr. E. M. Nuss, Editor
The Circulator
Lockhaven State College
Lockhaven, Pa. 17745

Dear Mr. Nuss:

Many thanks for your letter of May 13 and the copy of the March issue of your publication.

We certainly appreciate the opportunity to contribute to this fine publication. We are contacting one of our education consultants and our agency and will try to develop something on a new approach to overhead transparencies. Once this is completed we will, of course, send it to you for your evaluation and possible publication.

Basically, we have come up with a new multi-purpose approach for transparencies priced in a range of less than $10.00, i.e. up to ten transparencies for $9.95. This is a major breakthrough in the cost of transparencies and a major breakthrough in utilization of material. I am certain you will be interested in it once it is ready to go.

Thanks again Mr. Nuss, for your letter. If we can be of assistance at any time in the future, don't hesitate to write us.

Very truly yours,

DCA EDUCATIONAL PRODUCTS, INC.

W. E. MacLachlan

William E. MacLachlan
Vice President

WEM:ag

PETERS TOWNSHIP SCHOOL DISTRICT

McMURRAY, PENNSYLVANIA 15317

HOWARD F. JACK
SUPERINTENDENT

ADMINISTRATION BUILDING
616 EAST McMURRAY ROAD
(412) 941-6251

December 22, 1965

Mr. C. Herbert Larson,
Lockhaven State College
Lockhaven, Pa. 17745

Dear Herb:

I have shown the copies of your curriculum publication which you provided for me to several members of our staff, and their response has been so enthusiastic that I am wondering if it is possible for our district to be placed on your mailing list for future issues? I realize that we are scarcely in the area which is influenced directly by curriculum development at Lockhaven, but perhaps you will not mind sharing some of your good work with us.

I thoroughly enjoyed the opportunity to see and talk with you in Harrisburg, and hope that we shall find our paths crossing again in the near future.

Kindest regards to you and your family, and best wishes for a pleasant and enjoyable holiday season.

Very truly yours,

Howard F. Jack
Superintendent

HFJ/dr

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF PUBLIC INSTRUCTION
BOX 911, HARRISBURG, PA. 17126

Appendix H-2

March 8, 1966

Mr. Eugene Nuss
Lock Haven State College
Lock Haven, Pennsylvania

Dear Gene:

From time to time we get requests from your neck of the woods for materials which the writers say they read about in THE CIRCULATOR. You've really got those people reading it!

How about putting me on your mailing list so we can see what you're saying about us? Also, I believe yours is the only Center which does anything like this -- so we'd like to see it for that reason too.

Thanks a lot.

Best regards,

Jim Kehew

James G. Kehew
Social Studies Coordinator
Bureau of General and Academic Education
Telephone #717-787-6743

JGK/b

Appendix #I

COLUMBIA COUNTY PUBLIC SCHOOLS

T. A. WILLIAMMEE, SUPERINTENDENT

COURT HOUSE, BLOOMSBURG, PENNA.

DIAL 784-1048

WALLACE E. DERR, ASSISTANT SUPERINTENDENT
ANDREW T. SCHURTZ, REGIONAL PROGRAM SPECIALIST

RUTH S. GOLDEN, HOMEMAKING EDUCATION
RUSSELL F. GILBERT, SPECIAL EDUCATION

July 1,1966

Dr. E. M. Nuss
Lock Haven State College
Lock Haven, Pennsylvania

Dear Dr. Nuss:

This is in reply to your letter of June 14, 1966, in which you ask about my reaction to The Circulator.

I have read The Circulator with considerable interest during the past year. I appreciate particularly the February, 1966 issue on Instructional Media. I was also interested in the programmed instruction and the articles on language laboratories.

Should you publish this again next year and would care to continue to send it to this office, I am sure it will be appreciated.

Very sincerely yours,

T. A. Williammee
County Superintendent

TAW:ay

Appendix #J

INVENTORY CONCERNING TEACHER KNOWLEDGE OF CURRICULUM MATERIALS AND INSTRUCTIONAL MEDIA

For the past year, a research project concerning instructional media has been underway in Curriculum Area VI of Pennsylvania. This study is under the direction of the Curriculum Area VI Coordinators at Lock Haven State College and under the auspices of the Department of Public Instruction, Bureau of Curriculum Planning. The entire project is supported by a research grant under Title VII-B.

As part of this study, teachers are being requested to respond to a series of factual and attitudinal items concerning curriculum materials and instructional media. No attempt is being made to identify or evaluate individuals.

Your cooperation is requested in completing this inventory. Select what you consider to be the best answer to the question and place a mark beneath the appropriate letter on the answer sheet.

1. In using educational television, the first step the teacher must take is to recognize there is no set formula in making use of this medium. The second step is to understand the need for adapting the programs to:

    a. School schedule.

    b. Student objectives.

    c. Student learning experience.

2. According to the insurance companies and experts in the field, which of the following is the most valuable experience in preparing students for safe driving?

    a. Actual driving experience.

    b. Driving skill tests.

    c. Driver training classroom experience.

    d. Driver simulator experience.

3. With which major phase of education is the Allegheny Educational Broadcast Council concerned?

    a. E.T.V. costs.

    b. Community relations

    c. Adult education.

    d. Curricular needs.

4. Which of the following statements is a typical finding of research on creativity?

    a. There is a high positive correlation between measures of creativity and intelligence.

    b. Many teachers do <u>not</u> recognize creative behavior and, therefore, confuse diligence and high intelligence with creative endeavor.

    c. There exists a high correlation between the amount and variety of audio-visual techniques used in the classroom and an increase in the student's creative behavior.

d. Creativity is a genetic factor and no known educational technique can increase or suppress a child's creative behavior.

5. Sidney L. Pressey, in 1925, carried out the first research which has led to a technological innovation in modern education and made for the controversy over the use of what educational medium?

a. Television.

b. Language labs.

c. Motion pictures.

d. Teaching machines.

6. From which company can a music teacher obtain the materials needed for a discovery approach to teaching music?

a. Folkway Records.

b. Columbia Records

c. Developmental Music, Inc.

d. Silver Burdett Company.

7. Which of the following is the imaginative third grade unit devised by Mrs. Margaret Long at the Bellefonte Area Elementary School?

a. A numbers unit utilizing charts and posters.

b. An individualized reading program stressing word recognition.

c. A weather unit which encouraged independent study.

d. A science unit on magnetism which was based on student projects.

8. What is the major objective of the educational television programmer when he establishes his program schedule?

a. To mix humor, knowledge, and factual data to make his program more like the regular broadcasts.

b. To encourage viewers to use the schedule of programs as being similar to the use of the library facilities.

c. To develop a balance between the intellectual and the abstract so the viewer will gain knowledge in a specific area.

d. To vary the time slots of programs and give top billing to what he considers to be more important in learning factual data.

9. According to the study conducted by the Tyrone Area Schools, which students benefit most from a supplemental-developmental reading program?

a. Low ability students.

b. Average ability students.

c. High ability students.

d. Special education students.

10. What is the most significant administrative advantage of the Edu-Tronics Electronic Classroom?

a. It eliminates the problem of providing a separate room for language laboratory facilities.

b. It is designed for rugged classroom use.

c. It employs advances of the Space Age such as those found in the Minuteman ICBM.

d. Its economy makes possible multiple installations of electronic classrooms.

11. What does the Peripole Zoo attempt to teach to mentally retarded children?

a. Rhythm.

b. The animal kingdom sounds.

c. Sound and its application to music.

d. Musical scales.

12. The "Games for Adolescents" experiment which was conducted at Johns Hopkins University sought to alleviate which of the following deficiencies commonly found in secondary education?

a. Secondary education tends to teach for the distant future.

b. The enforced, involuntary character of many secondary curriculums.

c. The dual role of teacher as being both teacher and judge.

d. All of the above.

13. Bald Eagle Area High School is currently developing a/an:

a. Guidance counselling system.

b. Instructional materials center.

c. Circular audio-visual room.

d. Computerized instruction center.

14. What organization has decided to discontinue its support of educational television?

a. Ford Foundation.

b. The Pennsylvania State University.

c. Carnegie Corporation.

d. The Pennsylvania Department of Public Instructinn.

15. The hand puppet, Mr. Knish, as used by William Schall at Akeley Campus School, Lock Haven State College, is considered by Mr. Schall to be an effective technique for:

a. Entertaining children.

b. Involving children in arts and crafts.

c. Motivating children to express themselves more frequently and clearly.

d. Gaining an understanding of the feelings and interests of children.

16. What type of receiver is necessary to pick up the E.T.V. programs of WPSX-TV?

a. A closed circuit receiver.

b. A standard television broadcasting receiver.

c. An E.T.V. Modulator.

d. An A.E.B.C. approved UHF receiver.

17. Several teachers at the Bald Eagle Nittany High School, Mill Hall, Clinton County, have recently expressed the belief that programmed instruction:

a. Allows each pupil to proceed at his own rate.

b. Improves textbooks and other materials of instruction.

c. Facilitates the learning and retention of course content.

d. Will take the place of the teacher in presenting factual data.

18. Which objective best describes the major concern of the new educational technology?

a. To develop teaching materials so that education will eventually become a fully automated process.

b. To demonstrate that teaching machines and audio-visual materials deserve to be part of the teaching/learning process.

c. To develop new teaching materials and to conduct research to determine their appropriate uses.

d. To improve the teaching/learning process by programming all learning situations and providing for computerized instruction.

19. Which machine provides teachers with the best method of utilizing individualized or small group instruction via the television medium?

a. Inverted mirror TV beam.

b. 8 mm. projector.

c. Videocorder.

d. Tele-Beam TV Projector.

20. Project Discovery is co-sponsored by Encyclopedia Britannica Films and:

    a. Ford Foundation.

    b. Bell and Howell.

    c. DuPont Industries.

    d. Eastman Kodak.

21. Which of the following is a fundamental characteristic of the Initial Teaching Alphabet (ITA)?

    a. The ITA has fewer symbols than the traditional alphabet.

    b. ITA develops both auditory discrimination and visual perception by use of pictures.

    c. By the aid of embossed letters and words, ITA develops kinesthetic senses.

    d. The ITA assigns only one sound to each of 44 characters.

22. According to a recent nationwide survey conducted by music educators, what percent of the children in America are getting adequate music education?

    a. 5 - 15%

    b. 15 - 25%

    c. 25 - 35%

    d. 35 - 45%

23. A good in-service program demands:

    a. Adequate physical facilities.

    b. Continuous opportunities for planning.

    c. Availability of funds for extra pay for teacher time.

    d. Intimate discussion groups.

24. The new 8mm. film is being suggested by its innovators as an ideal classroom media because it:

    a. Projects better than the 16mm. film.

    b. Has better sound qualities than the 16mm. film.

    c. Is stronger, more flexible, and easier to repair.

    d. Is contained in a cartridge and is extremely easy to put in a projector and operate.

25. An innovation of the elementary department of the Clearfield Schools was:

    a. A non-graded developmental reading program.

    b. The use of individualized carrels for gifted students.

    c. A physical education program for slow learners.

    d. The use of household articles to demonstrate modern math concepts.

26. What is the major characteristic of the magnetic record and playback features found on the new Graflex magnetic sound projectors?

    a. Television programs may be duplicated directly from television sets.

    b. The magnetic sound film is difficult to break but easy to thread.

    c. The teacher is able to make his own sound track for films.

    d. The teacher is able to produce the video portion of the film using a built-in camera.

27. According to the Grade Teacher, at what age have children been reported to be able to be projectionists?

    a. 5 years.

    b. 7 years.

    c. 9 years.

    d. 11 years.

28. The Tecnifax Corporation holds an in-service training program once a month for educators. Which audio-visual technique are they promoting?

    a. Videocorder.

    b. Overhead projection.

    c. Tape recording.

    d. Motion picture projection.

29. The new 8mm. film projector has much merit because:

    a. It makes individualized instruction more practical.

    b. It provides for film viewing by a small group.

    c. It permits production of teacher/student films at a relatively low cost.

    d. All of the above are features common to the 8mm. film projector.

30. According to J. Win Payne, author of "Current Views on School Music" what should be the broad objective of the school in regard to music?

    a. To provide opportunities for concept formations in music.

    b. To include all children in the music program.

    c. To fit the music education program to the child.

    d. To make life more enjoyable and develop companionship.

31. A pupil/teacher centered research project which is using audio-visual materials as the primary element of instruction is known as:

    a. Project Media.

    b. Project Talent.

    c. Project Discovery.

    d. Project Instruction.

32. Which publication offers recorded foreign language courses in French and German for elementary children?

    a. The Circulator.

    b. Scholastic Magazine.

    c. The Instructor.

    d. The Elementary Teacher.

33. A novel approach used by a Lock Haven teacher and poet to inspire teenage students to listen to and enjoy poetry was:

    a. Organizing the class into a choral group.

    b. Having students read very simple poetry.

    c. Presenting students with the latest popular records.

    d. Introducing students to foreign language poetry.

34. Where may teachers obtain the high school economics textbook titled, <u>High School Economics Presentations</u>, free of charge?

    a. National Educational Association

    b. Pennsylvania Department of Public Instruction.

    c. American Manufacturers Association.

    d. Pennsylvania State Education Association.

35. What is a "whiteboard?"

    a. A new type chalkboard.

    b. The projection area of an overhead projector.

    c. A new synthetic bulletin board.

    d. A type of flannel board.